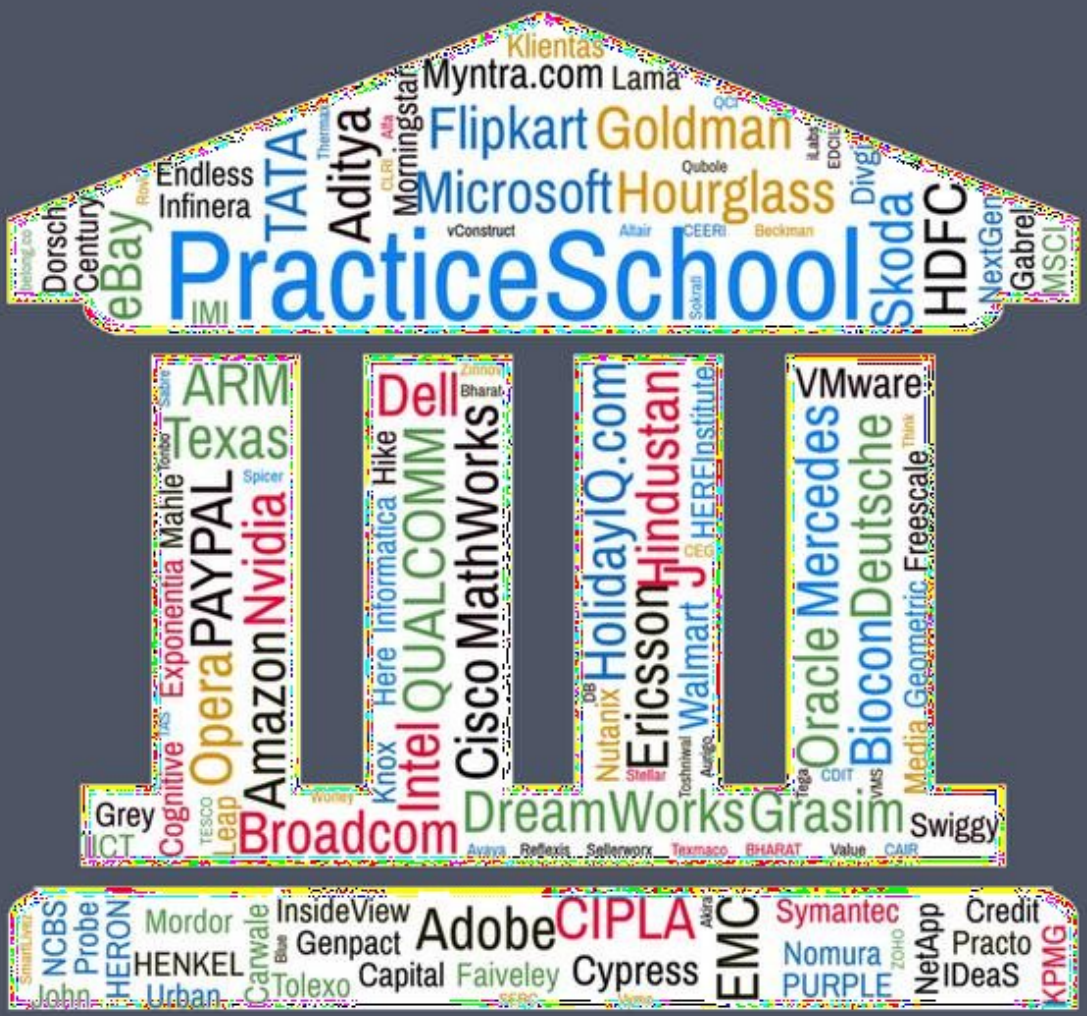
PS-II

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE

CHRONICLES



From the Desk of the Editor

It is my great pleasure to bring forth the 4th edition of the PS Chronicles.

This edition features 26 articles from mentors about 748 from students and about 49 from PS faculty sharing their experience from the II Semester of 2016-2017. This huge increase in numbers is a testimony to the usefulness of the PS- II Chronicles and its increasing popularity.

The primary aim of the PS Chronicles is to record the overall PS-II Experience of all the stakeholders – the students, the PS Faculty and the Industry Mentors.

The objectives of this Chronicle are manifold

- Prospective PS-II students can get to know about the experience of their seniors, currently at PS – thereby increasing awareness in the student community
- Increasing awareness among faculty about the nature of work happening in PS
- Bring back the experience gained in PS into academics- making the curriculum more industry relevant.

I would like to thank everyone who has participated in this activity- the students, the industry mentors and the faculty for sharing their experience. Thanks for making the 4th edition an even more bigger and better experience.

I would also like to thank and congratulate my editorial team for a task well done. I would also like to thank Mayank Sikerwar and Pokuri Madhuri without whom this edition could not have come out. I would also extend my thanks to Atul, Veena, Sunil & Ganesh of the Practice School Division, of BITS, Pilani – K K Birla Goa Campus for their help in bringing out the editions of PS Chronicles.

I would be happy to receive any feedback regarding the Chronicles. Please feel free to email me at psd@goa.bits-pilani.ac.in or at anupkr@goa.bits-pilani.ac.in

K.R. Anupama

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PS-II Station: Capillary Technologies - Testing Automation, Bangalore 335
Faculty 335
Name: Uma Maheswari Natarajan 335
Student 336
Name: UDAY SAI JAGANNADH NANDIPATI (2012B3A7669H) 336
PS-II Station: Central Electronics Engineering Research Institute, Pilani 337
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Name: Pawan Sharma 337
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Name: DHAWAL HARKAWAT (2013A7PS046P) 338
Name: SHAISTA HUSSAIN (2013A3PS322P) 339
PS-II Station: Cypress Semiconductor India Pvt Ltd., Bangalore 340
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Name: Gyanan 340
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Name: PRADIPTA BANDYOPADHYAY (2015H124069P) 341
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Name: SHEENA ANEES KHAN (2013A3PS682G) 345
Name: PRATHIKSHAA RANGARAJAN (2013A3PS394H) 345
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Name: Pawan Sharma 359
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Name: V CHANIKYA REDDY (2012B5A8612H) 360
PS-II Station: National Instruments Systems (India) Pvt. Lt, Bangalore 361
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Name: Rekha A 361
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Name: Sameera Rangavajjula (2013A3PS442H) 363
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Name: Deepank Gupta 365
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Name: APOORV SHARMA (2012B1AA945H) 405
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Name: ANIRUDDHA TVS RAO (2015H140048H) 407
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Name: Nisarg Shah (2013A7PS694G) 409
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Name: ANKIT AGARWAL (2013A7PS202H) 411
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Name: POOJA UPADHYAY (2015H124070P) 436
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Name: ROMIT MAHESHWARI (2015H140047H) 437
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Name: Harish Gopalakrishnan 439
Faculty 440
Name: Dhanashree N P 440
Student 441
Name: SRIGANESH RAJENDRAN (2015H124065P) 441
Name: ARCHANA CHANDRAN (2015H123162P) 441
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Name: ARATHI KRISHNA S (2013A3PS135G) 443
Name: KAKADIA RAVIKUMAR RAGHAVBHAI (2015H123037G) 443
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Name: PRATIK KUMAR (2012B5A8557G) 445
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Name: VANDITA KAMATH (2012B2A3756P) 448
PS-II Station: Sokrati Technologies Pvt. Ltd, Pune 449
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Name: SRIJAN SHARMA (2012B2A8591G) 449
PS-II Station: ST Microelectronics (I) Pvt Ltd., Greater Noida 450
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Name: Radhika gupta 450
Faculty 451
Name: R K Tiwary 451
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Name: ANURAGPALLAPROLU (2012B5A3405P) 452
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Name: PARAKH Sarda (2013A3PS176P) 453
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Name: Satya Sudhakar Yedlapalli 454
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Name: LAVINA CHANDWANI (2012B2A3626G) 455
Name: VARKEY M JOHN (2012B3A3467G) 455
Name: PINAKINPADALIA (2013A3PS600P) 456
Name: VAIBHAV GARG (2013A3PS587P) 457

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Name: Rahul Ambavat (2013A7PS011G) 469
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Name: Ayush Kataria (2013A7PS028P) 470
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Name: Abbas Suterwala 488
Name: Someshwar E 488
Name: Abhas 488
Name: Deepan Raj Jothilingam 489
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Name: Pradheep Kumar K 490
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Name: Sriya Ganesh Aiyer (2013A7PS115H) 491
Name: Sudhindra Sarma (2012B3A7632H) 491

Name: Tirthankar Saha (2013A7PS055H) 493
Name: Sai Srikar Kuravi (2012B3A7557H) 493
Name: Lavanya B (2015H103080P) 495
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Name: Ashish Narang 497
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Name: Ines Khandelwal (2013A7PS053P) 498
Name: Monalika (2012B1A7659G) 498
Name: Rohit Goyal (2013A7PS024P) 499
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Name: Karan Saluja (2013A3PS232P) 515
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Name: Nikhil Shetty (2013A3PS259P) 518
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Name: Ayush Agrawal (2012B5A8504G) 519
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Name: Tejas Harne (2013A3PS302P) 520
Name: Shubham Goyal (2013A3PS270P) 521
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Name: Mohit Menon (2013A7PS110G) 523
Name: Mayank Totale (2013A7PS047P) 524
Name: S Bhaargav (2013A7PS005G) 524
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Name: Mahesh Kumar Hamirwasia 526
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Name: Harsh Ambasta (2013A2PS568P) 527
Name: Devansh Mahajan (2013A2PS476P) 528
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Name: Karthika (2013A7PS202G) 529
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Name: Amit Patil (2013A7PS660G) 530
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Name: Simarpreet Luthra (2013A8PS441G) 532
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Name: Sambhrant Dash (2013A1PS599H) 534
Name: Rishu Garg (2012B1A1757G) 534
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Name: Mohammad Saleem. J 536
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Name: Karthik Vickraman (2012B1A4727H) 537
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Name: Navin Kalappa 623
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Name: S.Raghuraman 624
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Name: Paul Varghese (2013A7PS115H) 625
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Name: Aravind M (2015H149283P) 626
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Name: Dr. Satya Sudhakar Y 627
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Name: Astarag Chattopadhyay (2015H140023G) 628
Name: Gaurav Ahuja (2015H140024G) 629
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Name: Sarika Kumari 630
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Name: Dr. Satya Sudhakar Y 631
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Name: Anshul Agrawal (2013ABPS729P) 638
PS-II Station: Mol De Analytics, Hyderabad 639
Student 639
Name: Manchala Pavani (2012B4A3530H) 639
. 639
Name: Tadrish Kumar Singh (2012B1A2808P) 639
PS-II Station: Mordor Intelligence, Hyderabad 641
Student 641
Name: Pranav Kumar S (2015H149253P) 641
Name: Priyanuj Deka (2012B4A4745G) 642
Name: K Snigdha (2015H149290P) 643
Name: Manasvi Nandwana (2013A1PS657G) 643
Name: Ashwin Kuruvilla (2012B2A2321P) 644
Name: Duppalli Dheeraj Yadav (2013A2PS497H) 644
Name: Priyanuj Deka (2012B4A4745G) 645
PS-II Station: MSCI, Mumbai 647
Student 647
Name: Pratul Agarwal (2012B3A3606H) 647
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Name: Siddhant Agarwala (2013A4PS271P) 647
Name: Dhairik Fuletra (2013ABPS481P) 648
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PS-II Station: My POS Technologies Pvt. Ltd., Mumbai 649
Student 649
Name: Pratul Agarwal (2012B3A3606H) 649
PS-II Station: NetApp, Bangalore 650
Student 650
Name: Shilpa Kumar (2015H103015G) 650
Name: Shilpa Sarat (2015H103019G) 650
Name: Dhruv Krishnan (2013A7PS047G) 651
PS-II Station: NextGen PMS Pvt. Ltd, Bangalore 653
Faculty 653
Name: Mohammad Saleem Bagewadi 653
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Student 654
Name: Shubham Arora (2012B3A7522P) 654
PS-II Station: Nucleus Software Export Ltd, Noida 655
Faculty 655
Name: Ritu Arora 655
Student 656
Name: Sohit Patel (2013A3PS413H) 656
Name: Anurag Malik (2012B2A8515G) 656
Name: Shivang Badola (2013A7PS089H) 657
..... 658
Name: Tushar Kanaujia (2013A7PS011H) 658
PS-II Station: Nutanix Technologies India Pvt. Ltd., Bangalore 659
Student 659
Name: Ayush Sharma (2013A7PS083G) 659
Name: Kinjal Jain (2013A7PS162H) 659
Name: Varsheeth Talluri (2013A7PS045G) 660
Name: Harshit Jain (2013A7PS289P) 661
Name: Abhishek Tiwari (2013A7PS810G) 662
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Name: Piyush Jain (2013A7PS415P) 662
Name: Rachit Kansal (2013A7PS568H) 663
PS-II Station: PAYPAL, Bangalore 665
Student 665
Name: Divya Sanghi (2012B4A7958H) 665
Name: Aparajita Roy (2012B3A7652H) 665
Name: Kshitij Gupta (2013A3PS321P) 666
Name: Varun V Gopal (2013A7PS104G) 667
Name: Deven Bansod (2012B3A7316P) 668
Name: Divya Theja K.P (2013A7PS151H) 669
Name: B.V.Akhil (2013A3PS242P) 669
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Name: Aditya Sharma (2012B3A7513G) 671
PS-II Station: PAYPAL, Chennai 672
Student 672
Name: Yash Tibrewala (2013A7PS121P) 672
Name: Yash Pargaonkar (2013A7PS012P) 672
Name: Varun Vasudevan (2013A7PS103P) 673
Name: Vishal Athreya (2012B5A7625H) 674
Name: Garima Dhanania (2012B4A3381P) 675
PS-II Station: Pilani Experts Technology Labs Pvt. Ltd 676
Student 676
Name: Srujan Jayati (2012B4A4713G) 676
PS-II Station: Pitney Bowes Software India Pvt. Ltd., Noida 677
Mentor 677
Name: Dr. Manish Sharma 677
Student 678
Name: Deepak Gupta (2013A7PS156H) 678
Name: Ruchir Thaman (2013A7PS187H) 678
..... 679
Name: Yash Raj (2013A7PS200H) 679

PS-II Station: Qubole, Bangalore 680
Mentor 680
Name: Uday K. 680
Faculty 681
Name: Raja vadhana P. 681
Student 682
Name: Bhargavi Sagi (2012B2A7643H) 682
Name: Ayushi Agarwal (2013A7PS065P) 682
Name: Pooja Sinha (2012B4A7939H) 683
Name: Shrey Shah (2013A7PS098P) 684
PS-II Station: ReportGarden Technologies Pvt. LTd., Hyderabad 685
Student 685
Name: Vishnuvardhan Tirumala (2012B4A8768G) 685
PS-II Station: Rivigo Services Pvt Ltd, Gurgaon 686
Mentor 686
Name: Raghav Jain 686
Faculty 687
Name: Ashish Narang 687
Student 688
Name: Ayush Jain (2012B4A4739P) 688
Name: Aayush Khandelwal (2013A4PS480H) 688
..... 689
Name: Arjun Moolrajani (2013A3PS295P) 689
Name: Geetika Garg (2012B1A3817P) 690
Name: Ankurjyoti Bordoloi (2013A4PS208P) 690
PS-II Station: Sabre Holdings (Formely Sabre Travels), Bangalore 692
Student 692
Name: Bhavaya Gupta (2012B1A3833P) 692
Name: Sajidur Rahman (2011B5A7496G) 693
Name: Yogesh Godhwani (2012B1A3644G) 694
PS-II Station: Samsung R &D Institute - Image & Video Processing, Bangalore 696

Student 696
Name: ASHMITA ROY (2013AAPS214H) 696
Name: Shalini Chaudhuri (2013A7PS331H) 696
Name: Tushar Garg (2013A7PS070H) 697
Name: NAVEEN JAFER N (2013A7PS019H) 698
Name: RAJAS JOSHI (2012B5A7850H) 698
Name: SEGU ILA (2013AAPS236H) 699
Name: SAI SRAVAN ANANTHABHATLA (2013AAPS117H) 700
Name: KUNCHAKURI VARUN KUMAR (2013AAPS254H) 700
Name: KESHAVA CHANDRA SAI KANDIKONDA (2013A7PS025H) 701
..... 702
Name: SHUBHAM JAIN (2012B1AA741H) 702
..... 703
Name: SHREYASH OMNARAYAN MOHATTA (2012B4A7421G) 703
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Name: POLAMREDDY VINEETH REDDY (2012B3AA599H) 703
Name: SUBHAM SONI (2013A7PS069H) 704
Name: ABHILASH DODLA (2013AAPS248H) 705
Name: ANIL BHAN ABHISHEK (2012B4AA937H) 706
Name: VENKATA SIVA SAI SOWDITH V (2013AAPS228H) 706
PS-II Station: Seagate Technology HDD (India) Pvt. Ltd., Bangalore 708
Student 708
Name: SURABHI VATSA (2011HS12491P) 708
PS-II Station: Symantec Software Solutions Pvt. Ltd - Data Analytics, Bangalore 709
Mentor 709
Name: Kunal Patel 709
Name: Ashish Dhawan 709
Name: Prasad 709
Name: Sankalp Dubey 709
Faculty 710
Name: Raja vadhana P 710

Student 711
Name: SOUMYA SUCHARITA (2013A7PS007P) 711
Name: ANSHUL R. (2013A7PS114G) 711
Name: HARISH TUNDWAL (2012B4A7708P) 712
Name: DHAIRYA SANGOI (2012B4A7640P) 713
Name: Rajath S (2012B5A7589P) 714
Name: ASHISH PRATAP SINGH (2013A7PS161H) 715
Name: SHARTHAKMISHRA (2013A7PS049P) 715
PS-II Station: Symantec Software Solutions Pvt. Ltd - Data Analytics, Pune 717
Student 717
Name: NAMAN RAJBAID (2013A7PS064P) 717
Name: SHUBHAM JAIN (2013A7PS049G) 717
Name: KANDRIKA VENKAT ADITYA SARMA (2013A7PS165H) 718
Name: SHUBHAM JAIN (2013A7PS049G) 719
Name: Nishant Udgaonkar (2014H313060H) 719
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PS-II Station: TapChief, Bangalore 721
Student 721
Name: NAMAN RAJBAID (2013A7PS064P) 721
PS-II Station: Tata Digital Health, Bangalore 722
Student 722
Name: MUDIT DANGI (2013A7PS036G) 722
Name: VIREN JYOTHIRGH BANDA (2012B5A7585H) 722
Name: MUKUL KOTHARI (2013A7PS071G) 723
PS-II Station: Tata Motors Ltd, Jamshedpur 724
Student 724
Name: V.ANIERUDH (2013ABPS625P) 724
Name: NIKHIL SURISETTI (2013A4PS493H) 725
PS-II Station: Tau Films India Pvt. Ltd, Hyderabad 726
Student 726
Name: MUDIT DANGI (2013A7PS036G) 726

PS-II Station: Tolexo Online Pvt Ltd, Noida 728
Student 728
Name: NIKITA MATHUR (2015H149228P) 728
Name: MANOGNA.S (2015H149279P) 728
Name: KASHISH ARORA (2015H149247P) 729
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PS-II Station: Tonbo Imaging Pvt Ltd. - Image & Video Processing, Bangalore 731
Faculty 731
Name: Rekha.A 731
Student 732
Name: AKSHAY VENKATESH (2012B2A4737P) 732
Name: MUGALODI RAMESHA RAKESH (2013A8PS362P) 732
Name: RAVINDRA KUMAR SINGH (2013A3PS320G) 733
Name: AISHWARYA LEKSHMI C (2013A8PS388G) 733
PS-II Station: Toshiba Software (India) Pvt Ltd, Bangalore 735
Faculty 735
Name: Rekha.A 735
Student 736
Name: AKASH ATUL BOGHANI (2013A3PS681G) 736
PS-II Station: UPGRAD, Mumbai 737
Student 737
Name: MAYANK MUDGAL (2015H149293P) 737
Name: ARNAB DAS (2013A7PS020G) 738
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PS-II Station: Veritas Software Technologies India, Pune 740
Faculty 740
Name: S.Raghuraman 740
Student 741
Name: KARTIKEY MULLICK (2013A8PS785H) 741
Name: JUHI VINAYAK WAGLE (2013A8PS346G) 741

PS-II Station: Vizury Interactive Solutions, Bangalore 743
Student 743
Name: H SABARINATH (2013A7PS043H) 743
PS-II Station: VMware Software India Pvt. Ltd., Bangalore 744
Student 744
Name: POOJA RANI (2015H112171P) 744
Name: KRISHNAN. G (2012A4A7207G) 744
Name: ARJUN VIJAYVARGIYA (2012B1A7733H) 745
Name: V MADHUMITA MALVIKA (2013A7PS025G) 746
PS-II Station: Walmart Global Technology Services, Bangalore 747
Student 747
Name: AKSHAY JADIYA (2012B1A3805P) 747
Name: PULKIT SHUKLA (2012B2A7781P) 747
Name: AKASH SHARMA (2012B2A7771P) 748
Name: Aman Varma (2012B3A3481P) 749
Name: RAGHAVA KRISHNA REDDY MAMIDIDODDI (2013A7PS035H) 750
Name: Chaitanya Kummaragunta (2013AAPS094H) 750
Name: MANAN KHASGIWALE (2013A7PS128P) 751
Name: PATNAIK ROHAN GOUTAM (2013A7PS102G) 752
Name: R SRINATH (2012B5A7560G) 752
Name: ADITYA BHALLA (2012B5A7546G) 753
Name: Vamsee Kotaru (2013A4PS065H) 754
PS-II Station: Zeotap India Pvt. Ltd, Bangalore 755
Student 755
Name: PRATIK (2013A7PS057P) 755
Name: SHANTANU SHRIVASTAVA (2013A7PS068P) 755
Name: DIPESH PATEL (2015H103079P) 756
Domain: Biological Science 757
PS-II Station: Beckman Coulter (formerly ReaMetrix India P Ltd), Bangalore 757
Student 757
Name: Shreya Kumar (2012B1A3586H) 757

Name: N Tanmaye (2012B1AA750H) 758
PS-II Station: belong.co, Bangalore 759
Faculty 759
Name: Uma Maheswari Natarajan 759
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Student 760
Name: Devam Jhanwar (2012B1A4803P) 760
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Name: Harsh Varshney (2012B5A3576P) 760
Name: Shubhankar Srivastava (2013A7PS095P) 761
..... 762
PS-II Station: Centre for Cellular and Molecular Platforms (C-CAMP), Bangalore 763
Student 763
Name: Vishvesh Anikhindi (2015H129005G) 763
PS-II Station: Centre for DNA Fingerprinting and Diagnostics, Hyderabad 764
Student 764
Name: Ashwini Shrikhande (2015H129003G) 764
PS-II Station: CIPLA Ltd, Goa 765
Student 765
Name: Prajakta Kolambkar (2015H129001G) 765
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Name: Rishabh Malhotra (2015H129005H) 765
Name: Harikrishnan M (2015H129004G) 766
Name: Sriharsha Challa (2012B1A2671P) 767
PS-II Station: Decision Resources Group, Bangalore 768
Student 768
Name: Himanshu Agrawal (2015H108190P) 768
PS-II Station: Dr. Reddys Laboratories, Hyderabad 770
Student 770

Name: Payal Patel (2015H147200P) 770
Name: Vaishnavi Nimbalkar (2015H146216P) 770
Name: Jonnalagadda Lakshmana Rao (2015H147198P) 771
..... 773
Name: Rahulkumar Nimat (2015H146209P) 773
..... 774
PS-II Station: Halliburton Technologies, Pune 775
Student 775
Name: Anamika Sonkar (2015H101031P) 775
..... 776
Name: Akashdeep Singh Jamwal (2015H101035P) 776
PS-II Station: HERON A, Parexel Company, Chandigarh 778
Student 778
Name: Kovida (2015H108194P) 778
Name: Gaurav Jasraj Chandak (2015H146213P) 778
Name: Shravya Bhat (2015H146217P) 779
Name: Sanskruti (2015H147201P) 780
PS-II Station: Hindalco innovation center, Taloja 781
Student 781
Name: Akhil S Nair (2015H148051H) 781
PS-II Station: IMS Health, Bangalore 783
Student 783
Name: Saba Bano (2015H129007H) 783
Name: Pratiksha Shetty (2015H108189P) 783
Name: Mallavaram Sneha (2015H146205P) 784
Name: Priyanka Lonandkar (2015H108193P) 785
..... 785
Name: Saumya Singh (2015H129002P) 785
PS-II Station: IMS Health, Gurgaon 787
Student 787
Name: Pavithra R (2015H129004H) 787

Name: Diksha Mishra (2015H146214P) 787
Name: TN Mahesh (2015H146218P) 788
Name: Vismaya Raje (2015H146215P) 789
Name: Samir Ahmad (2012B1A8631G) 789
Name: Sahil Goyal (2015H146208P) 790
Name: Anirudh Sharma (2013A1PS567P) 790
Name: Ananya (2015H108196P) 791
Name: Bharath.P (2015H146202P) 792
PS-II Station: Novozymes South Asia Pvt. Ltd., Bangalore 793
Student 793
Name: Raaghavi R (2015H129002G) 793
Name: Rashmi Dongerdiye (2015H129010P) 794

Domain: Core Engineering

PS-II Station: Aditya Birla Corporate World Class Manufacturing, Mumbai

Student

Name: Deepak Israni (2015H103086P)

Student Write-up

Short Summary of work done during PS-II: Created a Cement Manufacturing Dashboard to store and display data pertaining to the process of cement manufacturing and to provide a choice of multiple trained classifiers to the user to make predictions based on provided data.

Tools used (Development tools - H/w, S/w): Python, Django, Scikit-Learn, Django-REST Framework, and Chart.js.

Objectives of the project: Displaying data pertaining to the process of cement manufacturing. Make predictions with trained classifiers based on provided data.

Outcomes of the project: A website where people working in a plant can access the necessary data.

Major Learning Outcomes: Got to utilize and learn about various different python libraries and packages. Learned about the software development process and the difficulties faced in practice (as compared to theory).

Details of papers/patents: Project abstract was accepted for ILAFM-2016 Conference for oral presentation, and work for Journal is on progress.

Brief Description of working environment, expectations from the company: Working environment was very professional but data pertaining to the project wasn't provided timely and stalled the project some times.

Name: Mohit Deshmukh (2013A4PS465H)

Student Write-up

Short Summary of work done during PS-II: My whole duration of PS-II was divided into two projects. The first project was application of data analytics for reducing energy consumption. The data from a vertical rolling mill in ultratech cement plant was used. The data was used to obtain specific energy consumption as a function of operating parameters of mill. Linear regression and neural networks were the methods used to form this function. Global optimisation is used to get the parameters corresponding to minimum energy consumption. These parameters will be generated by taking the minimum quality of the cement produced. The second project was in the area of detection and diagnosis of oscillations in control loops. The model for this was developed on the basis of literature review. The data for performance variable was available for these control loops. Using this data certain performance indices were derived and based on the range they fall in we could detect the faulty controller and the cause of the problem.

Tools used (Development tools - H/w, S/w): MATLAB.

Objectives of the project: Objective of the first project was to form an estimation function for the energy consumption and to give the optimum operating parameters for the mill.

Outcomes of the project: A standalone application was developed to give optimum operating parameters of the mill as output with varying to constraints. A standalone application giving detection and diagnosis of oscillation in control loops was developed.

Major Learning Outcomes: My MATLAB skills were enhanced. I learnt the use of research literature in developing actual models for an organisation. I also learned the use of neural networks and optimisation in data analytics.

Brief Description ofworking environment, expectations from the company: The working environment was good. We were mostly in contact with our mentor. Only in few instances we had to speak to our HR. The company expects us to complete the work at a normal pace. The output we get should be valid enough so that it can be applied in huge plants. Thus manufacturing plant employees expect a quality work to apply it in real circumstance. Thus the work is mostly research oriented and extra efforts are

appreciated. There is no management experience. The need to connect to employees except your mentor is very less.

There is no core engineering work.The project was excellent for working in a combination of data analytics and core knowledge of Mechanical or Chemical engineering subjects. Hence the PS-II station was great for a research oriented student.

PS-II Station: Aditya Birla Science & Technology Company Ltd, Mumbai

Student

Name: Abhishek (2013A1PS036P)

Student Write-up

Short Summary of work done during PS-II: I was working on the project titled: Technology development of pilot scale production of carbon black-latex masterbatch. The aim of the project was to modify the existing pilot set up for the process, gather data for designing of equipment and gather quotations from the vendors for the same.

Objectives of the project: - Technology development of pilot scale production of carbon black -latex masterbatch.

Outcomes of the project: - Modification of existing pilot set-up.

Major Learning Outcomes: Designing of a process at pilot scale after successful lab -scale production.

Brief Description of working environment, expectations from the company: ABSTC provides a very good opportunity for people who have interest in process designing, modeling, simulation, materials, etc. The working environment is very good and the mentors are helpful. Apart from work, they are providing good accommodation, travel bus, etc.

PS-II Station: Apollo Tyres Ltd. - IoT, Bangalore

Faculty

Name: Swapna Kulkarni

Comments: Expectations from industry: As each project has different significance and required different areas knowledge, students are working in areas like Motherboard chipsets, Network interface controllers and integrated circuits, Flash memory, Embedded processors, Software development, Biomedical Signal processing, Verification and Validation, Testing and Digital Image Processing and many more.

Industry is looking for interns who have strong knowledge in basics of circuit /control theory, DSP and cmos semiconductor, Excellent scripting skills in matlab/python as well as other programming languages like java, c and Embedded C.

Students can be prepared in the specified areas with the help of training and tutorials available from Industry before start of their PS II as well as during their internship.They can approach to their PS faculty as well mentors in PS II stations to get the access of necessary material.

Students can also avail the facility of training in their PS II stations to learn new technologies.

Student

Name: Salil (2013A3PS181G)

Student Write-up

Short Summary of work done during PS-II: I Work done was part of a project on Tyre parameters management system. The assigned work was mainly related to embedded systems.

Tools used (Development tools - H/w, S/w): ST Microcontroller, GSM and GPS.

Objectives of the project: - Collect data from GPS and transfer to Web server using GSM via Microcontroller.

Outcomes of the project: - Collect data from GPS and transfer to Web server using GSM via Microcontroller.

Major Learning Outcomes: Working of microcontrollers, GSM & GPS modules, UART, Server-side scripting and database management.

Brief Description of working environment, expectations from the company: Small R&D setup with very less employees.Environment good for learning purposes.Helpful and cooperating mentors. No PPOs as of now. No paid leaves for interns and very strict regarding In & Out times.

Name: Vishwajit Bugade (2013A3PS223P)

Student Write-up

Short Summary of work done during PS-II: Embedded software- development of low energy Bluetooth module to transfer data to mobile.

Tools used (Development tools - H/w, S/w): IAR workbench, Visual Studio xamarin, Android Studio.

Objectives of the project: - Transfer the data received through UART to mobile through Bluetooth and display the data to user through an app.

Outcomes of the project: - Successfully transferred data between two modules. And developed an app to display data.

Major Learning Outcomes: BLE module functionality, using AIR Workbench for embedded software development, App development.

Brief Description of working environment, expectations from the company: This sensors division of the company is very small with 5-6 people working on embedded software development. Company doesn't provide any other facilities like food and traveling expenses.

PS-II Station: B.G.Shirke Construction Technology Pvt. Ltd., Pune

Faculty

Name: M K Hamirwasia

Comments: Expectations from industry: One of the two students in B G Shirke, Pune (Neha Damle working on a Building Project) had the opportunity to become proficient in the use of softwares like ETABS and Planview.

Student

Name: Neha (2015H143051P)

Student Write-up

Short Summary of work done during PS-II: Analysis and design of a multistorey residential building.

Tools used (Development tools - H/w, S/w): IS Codes, AutoCAD and Etabs.

Objectives of the project: - Design a residential building.

Outcomes of the project: - Design of the building.

Major Learning Outcomes: Practical implementation of all the concepts in rcc Design.

Brief Description of working environment, expectations from the company: Structural department must reduce its working hours.

Name: Rana Anshuman (2013A2PS537P)

Student Write-up

Short Summary of work done during PS-II: Designed a lintel beam for an ongoing project in the initial days. Then designed and sent four drawings for two underground water tanks of different projects. Then drew the plan of a full G+22 storey building in planwin and did analysis in Etabs after importing.

Tools used (Development tools - H/w, S/w): Macros, VBA in Excel, Planwin, Etabs and Stadd Pro.

Objectives of the project: - To provide the details required for an ongoing project, to facilitate the ongoing work.

Outcomes of the project: - Work is still being done for most of my drawings. Constructions on three of the six sites have started. Rest will start soon.

Major Learning Outcomes: A major field experience which was needed to integrate the off field learning in classes to what was required on the field was achieved.

Brief Description of working environment, expectations from the company: The working environment was as poisonous as it could be with no support from managers or guidance provided of any sort. They expect you to be a fully finished article, which is exactly opposite the aim of this whole PS concept.

PS-II Station: Bharat Forge Ltd, Pune

Student

Name: Karthik Salian (2015H141102P)

Student Write-up

Short Summary of work done during PS-II: Blast analysis of a cylindrical pipe to calculate the pressure variation inside the cylinder and further use this to calculate the failure criteria for the cylinder.

Tools used (Development tools - H/w, S/w): Ansys Autodyn, SolidWorks.

Objectives of the project: Calculate the variation of pressure with time and space for various blast modes (4 blasts/min, 8 blasts/min).

Outcomes of the project: - The desirable results have not been achieved yet. The help software module being used is not readily available.

Major Learning Outcomes: Ansys Autodyn Module was learned.The setup for Blast loading components. Modelling of components. Mathematical model for blast loading was reviewed.

Details of papers/patents: 1.A detailed study of Computation of In bore Velocity-time and Travel-time profiles from Breech pressure measurement by D.K. Kankane & S.N Ranade.

Brief Description of working environment, expectations from the company: The Working environment in Bharat Forge is progress-driven. Especially in the Defence Department, the environment is professional and the employees are dedicated and hardworking. The exposure for interns could have been better. They should have provided a live project in the company which could have been very helpful and a better learning experience.

Name: Ameya Waikar (2013A4PS153G)

Student Write-up

Short Summary of work done during PS-II: Working on simulation of blast in a hollow cylinder to estimate the pressure variation with time and space.

Tools used (Development tools - H/w, S/w): ANSYS AUTODYNE.

Objectives of the project: - Understanding blast mechanism and the maths involved behind it.

Outcomes of the project: - Variation of pressure with time and space.

Major Learning Outcomes: ANSYS AUTODYNE, Ballistics.

Brief Description of working environment, expectations from the company: The working environment is pathetic. No resources allocated for interns, not even a PC.

Name: Pratim (2013A4PS116G)

Student Write-up

Short Summary of work done during PS-II: Worked on material visibility and tracking in BFL Pune premises. Material flow mapping of forging from raw material to finished jobs shopwise, line wise in ms excel.Working with third party companies to implement a tracking system involving handheld terminals, rfid tags, counters to keep track of material in real time. It was an IT project but the lean manufacturing part was handled by us.

Tools used (Development tools - H/w, S/w): Microsoft excel.

Objectives of the project: - Complete material tracking and visibility in BFL campus.

Outcomes of the project: - BFL is in talks with companies that provide solutions to material tracking.

Major Learning Outcomes: Flow of material in manufacturing sector. Learn manufacturing.

Brief Description of working environment, expectations from the company: campus was too large.Had to walk a lot daily. Summer heat plus forging in shops made it difficult to work in after noon outside.

Name: kamalnath kali (2013A4PS127H)

Student Write-up

Short Summary of work done during PS-II: To improve the tracking of finished goods and raw materials in the company.

Objectives of the project: - To improve the tracking of finished goods and raw materials in the company.

Outcomes of the project: - To improve the tracking of finished goods and raw materials in the company.

Major Learning Outcomes: to improve the tracking of finished goods and raw materials in the company.

Brief Description of working environment, expectations from the company: My mentors are quite friendly. They have assisted me in this project by providing me the information required. PPO is not granted by the company.

PS-II Station: CEG Limited, Jaipur

Student

Name: RONAK JAIN (2015H143053P)

Student Write-up

Short Summary of work done during PS-II: In the First few weeks in Practice School we studied the codes for the bridges (IRC 6 and IRC 12) then Sir gave us Design Sheets of Prestressed Concrete I girder for which Initially we started learning the Prestressed Concrete and Bridge Engineering basics and mainly we studied the losses part of Prestressed Concrete in depth.After that we learned about the Deck slab modelling in Staad pro by Grillage method and application of Live Load as per IRC 6 in Staad pro. All the analysis Part is done in Staad and design is done in Excel.The Courses taught by the University like Bridge Engineering and Prestressed Concrete help me a lot while understanding the design sheets and we also learned about the detailing practices in high seismic Zones. We went for Inventory to collect the Existing Bridges and culverts data which will very helpful to learn other aspect of Project.

Tools used (Development tools - H/w, S/w): Staad Pro and Microsoft Excel.

Objectives of the project: The Objectives of the Project was to Design the Super Structure of Bridge which include the Design of Prestressed Concrete I girder, Cross Diaphragm and Deck slab.

Outcomes of the project: While Decoding the Excel sheet we understand the Microsoft Excel and VBA and also learned modeling of superstructure in Staad Pro.

Major Learning Outcomes: We understand the analysis and design of Super Structure of bridges and also learned about the scheduling and Inventory of the Project.

Brief Description of working environment, expectations from the company: In CEG the working environment is very good. All are very helpful and clear our doubt very well. They give Live Project once we understand the design .They also take presentation to clarify our doubts.

Name: Bhavin Sharma (2015H130059P)

Student Write-up

Short Summary of work done during PS-II: Flexible and Rigid Pavement Design, Traffic Surveys, Traffic Volume Count Analysis, Report and Power point presentation preparation for Detailed Design projects.

Tools used (Development tools - H/w, S/w): Microsoft Excel, IITPAVE, Street pave.

Objectives of the project: - To carryout Detailed Engineering Design and Design Support for 4/6 laning of Road project.

Outcomes of the project: Pavement Design for Main carriageway in widening and Approaches, Service Road, Slip Road.

Major Learning Outcomes: An opportunity to work with with Experienced People in the industry and on live projects.

Brief Description of working environment, expectations from the company: Consulting Engineers Group Pvt Ltd provides an opportunity to share your ideas on projects, with great culture and working environment.

PS-II Station: Central Road Research Institute, New Delhi

Faculty

Name: M K Hamirwasia

Comments: Expectations from industry: In general, the students are good in adapting to the new learning environment. However, there are situations where students are not prepared in advance as the requirements in Industry are varied and latest eps.In terms of using certain software and operating certain euipment/machinery. For example, the student working in CRRI (Abhinav Jain working on Indian Highway Capacity Manual Project) got the opportunity to learn visim software. Another student (Parth Pareek working on Marshall Mix Design Project) got the opportunity to learn and work with an MR Machine. Likewise, students in Aurigo Software, Bangalore are first trained on Aurigo Masterworks which is company proprietary software. From this it is evident that students will always have new surprises in terms of learning and contributing in Industry.

Student

Name: Abhinav Jain (2013A2PS138P)

Student Write-up

Short Summary of work done during PS-II: Project Title-Determination of traffic density using snap shot data.

Tools used (Development tools - H/w, S/w): Microsoft Excel - Data Analysis, Traffic Data Extractor Package - Anna University, PTV VISSIM, MATLAB.

Objectives of the project: To determine the traffic density using snap shot data and developing a multiplicative factor to the fundamental equation of traffic flow.

Outcomes of the project: Trends relating the error in density measurement to the trap length and number of snap shots during the study interval.

Major Learning Outcomes: 1. Proficiency in various micro-simulation software.2. First hand experience of conducting a field survey.

Brief Description of working environment, expectations from the company: The institute provides a great learning opportunity for students. The guides are helpful and provide the student enough room to choose a project of his own interest within the allotted department. The project guide participated enthusiastically for the project and the overall learning. The students are encouraged to be a part of the organisations seminars, conferences and other activities that form the core of the company. The staff is interactive and willing to help whenever the interns need.

Name: PARTH PAREEK (2013A2PS106P)

Student Write-up

Short Summary of work done during PS-II: Determination of modulus of resilience of flexible pavements. Modulus of resilience is currently determined by using universal testing machine which is very costly and therefore is available with some premier research institutes in the country. The project is to develop relation and expression between indirect tensile strength test and modulus of resilience, so that it can be determined without employing UTM.

Tools used (Development tools - H/w, S/w): Brookfield viscometer, Indirent tensile strength test, Marshall Stability, Compactor and Universal Testing Machine.

Objectives of the project: Estimate modulus of resilience using indirect tensile strength test.

Outcomes of the project: Developed two correlations between modulus of resilience and mix characteristics.Empirical approach and dimensional approach.

Major Learning Outcomes: In depth details of flexible pavement design and strength of materials.

Details of papers/patents: To be kept classified as instructed by organization.

Brief Description of working environment, expectations from the company: CRRI is a premier research laboratory for pavement and traffic research. Working environment is remarkable.Access to the most learned scholars and scientists in field of pavement design throughout the project duration.

PS-II Station: Development Consultants Pvt. Ltd. (DCPL), Mumbai

Faculty

Name: M K Hamirwasia

Comments: Expectations from industry: The students at DCPL, Mumbai get to learn and use STAAD. The students at Synergiz, Hydrabad got the opportunity to learn BIM (Business Information Modelling) while working on the Nagpur Metro Rail Project. They also utilized and sharpened their knowledge of project management. Needless to say, students may not be well versed with all the softwares used by Industry but as long as they are committed to learning, they have the ability to do it in real time. So, Industry is looking for students with an aptitude for learning.

Student

Name: Anirudh Agrawal (2013A2PS449H)

Student Write-up

Short Summary of work done during PS-II: Studied methods for structural analysis.Modelled structure in STAAD space.Prepared Excel sheets.

Tools used (Development tools - H/w, S/w): Excel, STAAD.

Objectives of the project: Analysis of structure for construction design.

Outcomes of the project: Prepared and analyzed building drawing.

Major Learning Outcomes: Practical designing.

Brief Description of working environment, expectations from the company: Not much to expect.Quiet and independent environment. The progress depends solely on individual effort and will.

PS-II Station: Divgi TorqTransfer Systems Pvt. Ltd. - Bhosari, Sirsi

Student

Name: Sai Bhaskar Eluripati (2013ABPS507H)

Student Write-up

Short Summary of work done during PS-II: Implementation of Lean and Six Sigma practices on shop-floor. Design a table based on requirements of the operator. Calculate the Revenue per Employee and take measure to increase productivity.

Objectives of the project: Lean Implementation across the shop floor.

Outcomes of the project: Implemented One-piece flow, inventory management, pull system, TPM, Standardized Work, 5S and Visual Management based on Borg Warner guidelines across Divgi chain.

Major Learning Outcomes: Implementation of Lean Manufacturing, Process efficiency measuring tools.

Brief Description of working environment, expectations from the company: Very supportive and great working environment. All my co workers are eager to learn with me and teach me when they deem necessary. Overalla very great environment to learn and have a complete understanding on implementation of lean manufacturing.

PS-II Station: Dorsch Consult (India) Pvt. Ltd., Mumbai

Student

Name: Keyur Kapadia (2015H144038P)

Student Write-up

Short Summary of work done during PS-II: Quantity estimation, RA Bill Checking, Preparation of RFP (Request for proposal), site issue handling, Obtaining Client requirements, verifying client requirement with Plan Prepared, Preparing MPR (Monthly Project Report), Preparing Close-out Report, Obtaining Quotation for works, Plan Verification, Preparing Tender Presentation, Preparing Client presentation, Planning and obtaining Water demand, Storm-water drainage design, Sewage generated, Sewage treatment plant capacity, Rain-water harvesting etc., Plan Modification.

Objectives of the project: Execute work as per client requirement, site management.

Outcomes of the project: Work executed as per client requirements and with quality maintained.

Major Learning Outcomes: Learn to deal with client, project management work, preparing tender, Coordination with site.

Brief Description of working environment, expectations from the company: Less friendly environment, amount of work given during internship was much less due to which learning part was little less than expected. Work provided is good and responsibility is given. Overall good place for internship.

PS-II Station: EnSci - A Unit of Weir Minerals India Pvt. Ltd., Bangalore

Student

Name: A. Sandeep Reddy (2013A4PS155P)

Student Write-up

Short Summary of work done during PS-II: I have been allocated projects related to waste heat recovery and vibration monitoring of centrifugal pumps. The first one was a challenging project as heat extraction is from heat source at low temperature, where it finds application in ball Mills. It is crucial because comminution efficiency is 1 %. I have studied various heat recovery options and suggested a suitable process for low temperature range and checked its feasibility. The next project is related to vibration in broad sense. Initially I had to design a fixture to mount vibration box, then I have taken readings from accelerometer. Once readings are there I had to perform Fourier transformation to the available data and found the amplitude-frequency response of the given system. These are the two projects in a nut shell.

Tools used (Development tools - H/w, S/w): Excel, Solid Works.

Objectives of the project: To find an economic process to recover waste heat from comminution process.To does Fast Fourier Transformation (FFT) on the available data.

Outcomes of the project: An economic process of waste heat recovery is suggested. FFT of the given data is done.

Major Learning Outcomes: FFT, working on real time projects.

Brief Description of working environment, expectations from the company: I was able to get a taste of how the corporate life is different from student life. The environment in this company was so good, people were having a great helping nature. I got to know a lot about how pumps work. I would definitely say that Practice School - II enabled me to know about corporate world and gave an opportunity to work on projects in real life environment.

Name: Animesh Goyal (2013ABPS548P)

Student Write-up

Short Summary of work done during PS-II: I worked on 3D printing and a new software named aggflow which is used by mining industries.

Tools used (Development tools - H/w, S/w): Aggflow and cura software.

Objectives of the project: To design components on 3D printer that the company uses and learn new software which will reduce the costs incurred in the company.

Outcomes of the project: I was able to create cyclone and crusher on 3D printer and learned the new software which reduced the costs incurred by the company by 23%.

Major Learning Outcomes: Handled completely new software.

Brief Description of working environment, expectations from the company: Working environment was pretty chilled out, sometimes boring. The manager is very busy and is not able to devote much time. Company timings are also flexible which a very good thing is.

Name: P Sethuram (2013A4PS373G)

Student Write-up

Short Summary of work done during PS-II: 1. Artificial Neural Network using back propagation or forecasting of spare parts to reduce the lead time. 2. Design of transfer chute for underground gold mine.

Tools used (Development tools - H/w, S/w): Python, MS Excel.

Objectives of the project: Develop an algorithm for forecasting of spare parts using machine learning.

Outcomes of the project: 1. Backpropagation algorithm developed. 2. Transfer chute for various material properties and angles of conveyor belt developed.

Major Learning Outcomes: Python programming, introduction to articial neural network.

Brief Description of working environment, expectations from the company: Healthy working atmosphere with helpful mentor. But most of the times you have to figure out to solve the problems on your own.Overall a decent company for students of mech background.

PS-II Station: EnSci - Fairfield and Power Drive Technology Pvt Ltd, Ahmedabad

Student

Name: Zalak Shah (2013A4PS251P)

Student Write-up

Short Summary of work done during PS-II: I redesigned equipment used for wastewater treatment. It was designed previously by the company but its efficiency was below par.

Objectives of the project: To increase the efficiency of the equipment used in Grit removal stage for wastewater treatment.

Outcomes of the project: The new design was suggested. The consultant shall do its CFD analysis according to the changes suggested.

Major Learning Outcomes: Insights into a new field of wastewater treatment.

Brief Description of working environment, expectations from the company: Working environment is okay. An office place located at the heart of the city. A few BITS' Alums are working over there, they are quite helpful.

PS-II Station: Faiveley Transport Rail Technologies India Ltd (FTRTIL), Hosur

Student

Name: Arun Antony (2015H106138P)

Student Write-up

Short Summary of work done during PS-II: Preparing tender purchase plans for the company.

Tools used (Development tools - H/w, S/w): Python, MS Excel.

Objectives of the project: Tender costing.

Outcomes of the project: Learned about tender costing.

Major Learning Outcomes: Learned about tender costing.

Brief Description of working environment, expectations from the company: Good climate, less work pressure, nice place to work.

Name: Gautam Matlani (H2015142128P)

Student Write-up

Short Summary of work done during PS-II: Task 1: Capture planning for the Services Division of FT India.Learned the concept of Capture Planning and implemented the same.

Task 2: SWOT analysis of FT India and its competitors of the likes of Knorr Bremse, Stone India etc.

Task3: Development of Tender Purchase Plan for Brakes and Safety division of FT India.

Task 4: Value Stream Mapping of the Warehouse and Material Handling Unit in FT India Hosur.

Tools used (Development tools - H/w, S/w): MS Excel.MS PowerPoint, VBA.

Objectives of the project: Aid in the strategic business development and Costing of the upcoming projects of FT India.

Outcomes of the project: Capture Plan of Services Division.Detailed SWOT Analysis of the competitors to aid FT India understands its competition.

Major Learning Outcomes: Capture Planing, VBA (Visual Basic for Application), Competitive Analysis and Market Study, Tender Purchase Plan Making, Supplier Selection and identification.

Brief Description of working environment, expectations from the company: A very helpful and open minded company.Due to the recent acquisition by Wabtech a series of changes are happening.Learning environment is decent but one has to toil hard on his own to learn the traits.No spoon feeding at all.One has to be involved completely to learn on own .Managers will help and assist for sure.Good work is always appreciated.A SME with hard working people on the whole.MS Excel and Powerpoint are the only desired requiste to be known if working in Sales and Marketing or Purchasing Department.No specific R&D done in FT India so Creo or Matlab skils will hardly come in handy.

PS-II Station: Geometric Limited, Mumbai

Student

Name: J Shankar Narayanan (2013A4PS137G)

Student Write-up

Short Summary of work done during PS-II: 3D CAD Product Development, Lot of learning in geometry and software development got the chance to work in projects from various domains.

Objectives of the project: 1.Creating a STEP File from a STL File 2.Optimizing the creation of an infill solid 3.Web Development.

Outcomes of the project: Created applications which aid 3D CAD Product Development.

Major Learning Outcomes: Lot of learning in geometry and software development.

Brief Description of working environment, expectations from the company: Stipend is very low just enough to cover the rent. Work is good.

Name: Rajesh Ramesh (2013A4PS189G)

Student Write-up

Short Summary of work done during PS-II: For the first project some tasks were automated for testing DFMPro which is a CAD Integrated Design for Manufacturing software by writing scripts in Python and Excel VBA. The next work was to add search functionality for NX DFMPro interface using MFC VC++ programming. Before implementing the feature in the company's code an independent sample application was built.

Tools used (Development tools - H/w, S/w):C++, Python and Excel VBA.

Objectives of the project: To automate a task in software testing for DFMPro.

Outcomes of the project: Successfully automated a task for DFMPro testing and less time is taken for testing.

Major Learning Outcomes: Coding.

Brief Description of working environment, expectations from the company: The Mumbai office deals with CAD/CAM sofware products. Project depends on mentor and department allotted. You can get projects related to 3D Printing, B-day, Cloud or projects like testing automation, MFC programming.

PS-II Station: Grasim Industries Ltd., Nagda

Student

Name: Shubham Bhardwaj (2013A3PS414H)

Student Write-up

Short Summary of work done during PS-II: I conducted a study of the applications installed, a study of historical failure events, figuiring out the actions required to overcome all such problems and implementation on a model equipment before giving the final suggestion to the organization.

The work needed to complete the objective included a detailed study of the statistics resulting from the trends of failures: month-wise, specific failure-wise, department-wise and machine-wise. This resulted in a broad analysis of the root causes behind the historical failures.

Once the trends had been analysed, I talked to experienced employees regarding the root cause of the failures. This doubly ensured the theoretically determined degree of correlation of the responsible factors and their remedies.

Once the theoretical conclusions have been verified by employees' experience and the project guide's expertise, I shall apply them practically on model equipments. If we find our preset desired outcomes emerging, I shall present a porposal to the Finance Function to implement them.

Tools used (Development tools - H/w, S/w): MiniTab, MS Office.

Objectives of the project: To evaluate the performance of installed VFDs in GRASIM SFD, analyse the trends of failures, find out the root causes and eliminate the causes to prevent future failures.

Outcomes of the project: The reduction in the number of failure events will result in the following savings:

1) Cost of replacement

2) Reduction of working capital

3) Improvement in overall effeciency of VFDs and hence, motors deployed

4) Greater employee satisfaction

5) Net improvement in the ability to maximise production

Major Learning Outcomes: WCM, PSSR, QCDIP, Organisational structure and delegation/roles and responsibilities as per KRA matrix for each and every individual so that each goal and key result area is linked to business goal for enhancing our performance, various industrial tools of Quality Control management; Motor control, load flow analysis, electrical energy systems theory, motor maintenance, electrical machines testing, switchgear protection, relay coordination, DCS, PLCs etc. Learning areas also include statistical analyses etc. I also had the opportunity to spend a full day with the ISO energy auditors from DNV-GL.

Brief Description of working environment, expectations from the company: The place has a quintissential central Indian spiritual air about it. The people are very friendly and are always motivated to help the students. PS-2, PS-1 and WILP have been a long familiarity with the employees and residents of Nagda. There has been a plethora of BITSians gaining from Grasim Industries Limited, and one semester is far too short for the vast expanses to learn. The plant has a wide range of installed machinery and systems, giving you a practical tour into the historical development of the operation of process plants across decades. The weather is essentially Malwi, as is the lip smacking food. Be it the local sites, or the contacts I made; be it the working environment or the care I received- It has been a memory to cherish forever. Thank you PSD, thank you ABG!

PS-II Station: Henkel, Mumbai

Student

Name: R S Siddharth (2012B4A1707G)

Student Write-up

Short Summary of work done during PS-II: I was involved in various activities involved before the setting up of a Chemical plant, from the point of view of a Process Engineer, ranging from Safety Integrity Levels (SIL) Analysis, to the preparation of the 'recipe' for various batches to be fed into the Distributed Control System (DCS).

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: To prepare SIL analysis for every P&ID dictating 'Project Ganesha' and to prepare the DCS recipes for every product to be manufactured under the AIL and MPT technologies.

Outcomes of the project: SIL analysis of every node in every single P&ID based on the interlocking/cause and effect diagrams, procuring the MSDS for hundreds of products, and preparation of DCS recipes for products under AIL and MPT technologies.

Major Learning Outcomes: A practical application to Chemical Engineering concepts theory studied in books.

Brief Description of working environment, expectations from the company: The student is assigned a desk in the Henkel India HQ at Sanpada, Navi Mumbai. The fellow employees are helpful and supportive but stick to their own busy schedule. The work environment is very good with various learning opportunities. With the commencement of Project Ganesha in late 2017, vacancies and PPO opportunities are sure to improve.

PS-II Station: Hindustan Unilever Research Centre, Bangalore

Student

Name: Arnav Deshpande (2013A1PS630G)

Student Write-up

Short Summary of work done during PS-II: My work involved the study of micelle formation in binary surfactant systems using computational methods. I had to choose meso-scale simulation techniques such as Dissipative Particle Dynamics and develop an understanding of the micelle systems formed. Further work involved analysis of these systems to deduce descriptors and build an empirical model using different statistical methods such as Genetic Function Approximation to predict the system viscosity.

Tools used (Development tools - H/w, S/w): Softwares: DL MESO, Pipeline Pilot, GAMESS etc.

Objectives of the project: Understanding binary surfactant systems using computational methods.

Outcomes of the project: Prediction of a micellar structures and foundation towards developing an empirical equation for viscosity.

Major Learning Outcomes: Micro/Mesoscale phenomena.Working of top class R&D centers.

Details of papers/patents: The work could be published later as per my guide.

Brief Description of working environment, expectations from the company: The working environment is very cool. I worked from 8-5 with much of my work self-driven with little interference. My guide was great and helped me glide through the project and motivated me. The company expects you to contribute towards their goals and assist the major ongoing projects. I got great research exposure which will help in my further studies aimed at attaining a PhD.

Name: V S V Sravya (2013A1PS551P)

Student Write-up

Short Summary of work done during PS-II: Capacitive Deionization is an emerging technology in water purification. It uses electrosorption to remove ions from water. Mathematical model of these phenomena can be useful in understanding the real life situation. With a lot of assumptions and idealizing the system, we have developed a model and successfully got results for a 1D aqueous sodium chloride (with and without water splitting system). It happened in 4 phases - 1.Validating the existing model from literature. This model didn't give desired results under reversed polarity conditions 2.Formulating my own model. The model was tested on a single electrode system with sodium chloride as electrolyte. 3. After successful validation in phase-2, I created a bi-polar electrode model for same electrolyte. The results predicted the electrosorption phenomena accurate again. 4. In this phase, water splitting is also considered. With certain assumptions and refining, we got the right results. The next stage of the project would be to include faradaic reactions and estimate the pH change.

Tools used (Development tools - H/w, S/w): COMSOL Multiphysics.

Objectives of the project: 1.To model a bipolar electrode system which contains aqueous sodium chloride as electrolyte 2.To capture electrosorption phenomenon 3.To model the effect of faradaic reactions on above system.

Outcomes of the project: Refinement of existing mathematical models to capture electrosorption phenomena.Concentration and electric potential profiles of electrosorption phenomena.Effect of faradaic reactions on electrosorption.

Major Learning Outcomes: Learned new software - COMSOL. Learned to optimize solutions and research methodology. Learned the concepts of electrochemistry in depth.

Brief Description of working environment, expectations from the company: Working environment is great. My colleagues and lab mates are very friendly. Work life balance is great. The working environment is slightly informal. No dress code. Expect criticism during presentations and report writing. They will make you refine as many times as possible. You can work on your own speed and there is no

pressure in general. The kind of research work I do is hit and trial. So, patience and persistence is the key. My colleagues are usually open to ideas and consider interns as peers.

Name: Abhilash Ashok Chandanshiv (2013APS749H)

Student Write-up

Short Summary of work done during PS-II: My work involved, fabrication of customised turbidity meter. Basically it is online turbidity meter which has more benefits than the conventional turbidity meter. The dirt particles can redeposit on the fabric while washing. The settling of dirt particles can be correlated to the anti re deposition data. If we can correlate this, it will save lot of efforts.

Tools used (Development tools - H/w, S/w): Turbidity meter of different light source, Malvern Mastersizer.

Objectives of the project: Fabrication of customised turbidity meter and correlation of the data obtained to the anti re-deposition data.

Outcomes of the project: Presently setup is ready and different formulations can be studied to know settling of the dirt particles in the formulations.

Major Learning Outcomes: Turbidity science, Lab ethics and safety, settling study, anti-redeposition understanding.

Brief Description of working environment, expectations from the company: HURC Bengaluru timings for the work are from 8.30 AM to 5.30 PM. The perople here are very helpful and humble. You will get a chance to explore to one of the best research culture. Sometimes cultural activities also occur for the refreshment.

Name: Mahesh Agrawal (2013A1PS610P)

Student Write-up

Short Summary of work done during PS-II: I work on two approaches for hardness removal from water. One was using filter coating and other was using membranes. In the former approach a filter was designed to match the turbidity removal performance of ceramic filters (benchmark). In the second approach, I tested three third party membranes for Calcium, Sodium and TDS removal.

Tools used (Development tools - H/w, S/w): The project work was completely experimental. The experiments were carried out using general chemical and equipment. No special chemical or powder was used in the experiments.

Objectives of the project: Hardness removal from water with main focus on Calcium removal.

Outcomes of the project: Worked on two approaches for hardness removal from water. In the first approach a filter was designed to match the performance of currently used ceramic filters. In the second approach, three membranes were tested for calcium removal.

Major Learning Outcomes: Water filtration techniques using Ceramic filters, HDPE filters and RO membranes.

Brief Description of working environment, expectations from the company: The overall work environment for Water Lab was better than any other previous internship I had. I was given freedom to try and test different techniques for the experiments. Also, resources were readily available to perform the experiments.

Name: Varun Shetty (2013A1PS617P)

Student Write-up

Short Summary of work done during PS-II: Project involved determining the factors influencing the removal and recovery of DOBS surfactant from wastewater using various ion exchange resins and determining what conditions and which resins would be give the best performance. The project was divided into 4 major parts: Equilibrium and Kinetics study of Adsorption and Desorption processes. Several anion ion-exchange resins were tested for the project. These resins fall under either strong or

weak anion ion exchange resins. The effect of pH and ionic strength on the efficiency of the resins was studied. The equilibrium experiments were conducted and data fitted into the Langmuir model. The gamma values of the resins were obtained. Hofmeister series experiments were conducted to determine the desorping power of different solutions for the different resins. Following this, sodium carbonate dose response experiments were conducted to determine how the desorption efficiency varies with concentration. Next, adsorption kinetics experiments were conducted. Batch experiments were done varying the initial DOBS concentration and the orbital shaker RPM and see how this effects the kinetics of the reaction. This was used to determine the order of the reaction. Packed bed adsorption kinetics experiment was conducted on varying conditions of initial DOBS concentration and pump rate.

Tools used (Development tools - H/w, S/w): UV-VIS-NIR Spectrometer, Orbital Shaker.

Objectives of the project: Removal and Recovery of Surfactant (DOBS) from Wastewater using Ion-Exchange Resins.

Outcomes of the project: Determination of most efficient resin and the physical factors that will give best removal and recovery of DOBS surfactant.

Major Learning Outcomes: Physical and chemical properties of surfactants and of ion exchange resins and their working, Equilibrium and kinetics of adsorption and desorption processes.

Brief Description of working environment, expectations from the company: HURC Bangalore has a beautiful campus. There are various labs which specialize in different areas of R&D like Hygiene, Laundry, Tea, Homecare etc. I had my project in the Laundry dept. The scientists at HURC B'lore are all extremely dedicated and put in a lot of work into their respective research. They are very approachable and always willing to lend a helping hand whenever we have any queries or are curious about their work. Safety in the work environment is something that is stressed on time and again and every intern at the company has to undergo initial safety training before he or she can work in the labs. Ample guidance was provided with regard to my project while giving importance to my own inputs and what I feel is the next step ahead. We had to give regular presentations to our mentors on the progress in our projects and they would give valuable inputs and feedback on our work. Towards the end of the internship, all of us had to present our project at a science forum before the scientists at HURC where we would be questioned and our project thoroughly analyzed. Overall I had a very positive experience at HURC Bangalore and believe I have learnt a lot from the 5 months I worked here.

Name: Nidhi Aggarwal (2013A1PS606P)

Student Write-up

Short Summary of work done during PS-II: To analyse the effect of surface potential of 2 bacteria: E.coli and S.aureus under different conditions and environment. The surface potential tells about the charge present on the surface of bacteria. Bacteria are always negatively charged. So, once these bacteria come in contact with oppositely charged actives, they get agglomerated and settle down. Once settled down, we can remove these suspended particulates. It has applications in disinfectants, cosmetic creams, tea bags, etc. Many positively charged cations like sodium laurate, SLES, ethyl diamine tetra acetate, sodium citrate were being used to analyse the electrophoresis of bacteria in dip cell.

Tools used (Development tools - H/w, S/w): Malvern Zeta Sizer ZSP.

Objectives of the project: To understand the effect of zeta potential of E.Coli and S.aureus with different formulations.

Outcomes of the project: Learnt the working principle of Zetasizer, explored various features of MS Excel.

Major Learning Outcomes: Learnt the behavorial dynamics. PS2 has given me a platform to transform from fun loving student to a responsible full term employee.

Details of papers/patents: Will be decided by Morris Sir.

Brief Description of working environment, expectations from the company: HUL is a good platform to explore the aspects of pure sciences. Technology, here is really advance. People give importance to even minute things. It follows proper hierarchy.The discussions which takes place in forums is inter disciplinary. It gives a wide horizon to think about the same thing from different angles. People are very co-operative, very humble and very down to Earth. Special emphasis is given to safety. I must say, their ethical code of conduct is one of the best in India.

Name: Harsh Tripathi (2013A1PS593P)

Student Write-up

Short Summary of work done during PS-II: Carrying out experiments to measure dynamic surface tension of single and mixed surfactant systems along with corresponding formability measurements. The results were tabulated to investigate the effect of presence of counter ions and additives in such systems.

Tools used (Development tools - H/w, S/w): Equipment to measure surface tension and to analyze foam produced by various methods.

Objectives of the project: To investigate the effect of counterions on the behavior of anionic surfactant system. To identify best class of additives as foam control agents in mixed surfactant systems in neutral pH conditions.

Outcomes of the project: Presence of counterions increases surface activity of anionic surfactants and increases foam content in studied systems. Amongst the various additives studied a cationic polymer was identified as a better foam control agent.

Major Learning Outcomes: Surface tension data can be correlated with foamabilty measurements to estimate the bubble surface age regime in various foam generation methods. This correlation has limitations and is better applicable in low surfactant concentrations.

Brief Description of working environment, expectations from the company: Working environment is highly collaborative and suggestions are welcome from the intern's side. Most employees work /consult on a variety of projects hence help during project work was welcome and forthcoming.

PS-II Station: IFB Engineering Division, Kolkata

Student

Name: Nihit Wadhawa (2015H141044H)

Student Write-up

Short Summary of work done during PS-II: My work in IFB Engineering division was related to the simulation of Fine Blanking Process and other related metal forming processes such as coining, semi-piercing operations which are required to produce a Fine Blanked Component. At Design and Development Department of IFB Kolkata, the major challenge faced has been in designing the tool for parts involving large plastic deformations with close tolerances which requires number of tool trials. With the help of simulations done during my term here as an Intern, I worked on simulating such problems. Simulations help the design team to visualize and predict the material flow and make changes in the tool design to achieve desired part with dimensions in tolerance band. As an intern, my role was to receive inputs from the design team, modelling the problem into the Simulation Software and then Retrieving the results i.e., the stress and strain values, reaction forces and deformed model to the design team which was compared with the desired part geometry and they made changes in the tool if necessary based on the simulation results.

Objectives of the project: Simulation of Fine Blanking Process.

Outcomes of the project: 1) Simulation of processes involved in production of FB parts.

2) Predicting the material flow undergoing plastic deformation due to various forming operations.

3) Comparing the Deformed models with final part profile to validate the design.

Major Learning Outcomes: Fine Blanking Process, Simulation techniques required for FINE BLANKING Process. Reducing the simulation time for an explicit dynamic simulation using mass scaling.

Brief Description of working environment, expectations from the company: IFB Engineering division is basically the Fine Blanking division which produces automotive parts for various two wheeler as well as four wheeler automotive companies. Being a supplier, there is a bit of work pressure to meet the targets but still employees will help you in understanding the process & will guide you in the project. There is a

lot of potential that can still be explored in simulation of Fine Blanking process which requires more resource than i had during my term.

PS-II Station: IFB Industries, Goa

Student

Name: Vaibhav Marfatia (2015H141101P)

Student Write-up

Short Summary of work done during PS-II: My project is based on development of new dynamic structure of washing machine system. To develop and optimize new design it is essential to have mathematical model of dynamics of washing machine. So in my project I developed mathematical model of various elements in dynamic structure like friction damper, free stroke damper, soft start damper, and spring and derived equation motion of oscillation group in three dimension with three transnational and three rotational degree of freedom. This mathematical model is validated experimentally. Then this model is used to optimize dynamics of washing machine such that it reduces motion of tub inside the cabinet as well as reduces force transmitted to cabinet structure to minimize structure vibration.

Tools used (Development tools - H/w, S/w): Matlab, Adams, Creo and Maple.

Objectives of the project: Derivation of mathematical model of washing machine and optimization of suspension such that it reduces motion of tub inside the cabinet as well as reduces force transmitted to cabinet structure to minimize structure vibration.

Outcomes of the project: Obtained mathematical model which has good agreement with experimental data and optimize suspension system to increase capacity of washing machine with minimum noise and vibrations.

Major Learning Outcomes: Learned in depth about multi-body dynamics, optimization techniques and experimental data collection techniques and post processing.

Brief Description of working environment, expectations from the company: Working environment in IFB is very good staff's are very friendly, co-operative and knowledgeable.

PS-II Station: John F Welch Technology Center (GE), Bangalore

Faculty

Name: Sreedhar Madichetty

Comments: Expectations from industry: JFWTC is well known for its R&D in Energy and Power sectors. It includes thermal power station equipment, Gas turbines, Wind energy systems, Power Electronics etc. Industry expects some insight on Ansys and Altium design software's with extensive knowledge on App development. JFWTC most of the works are getting automated using IOT technology and they are calling it as Industrial Internet of Things (IIOT).

Student

Name: Swaminathan P (2012B5A4569G)

Student Write-up

Short Summary of work done during PS-II: Gas Turbine thermal modelling, Probabilistic data reconciliation.

Tools used (Development tools - H/w, S/w): MS Excel, CrystalBall, GTP-GE's own software.

Objectives of the project: Reconcile the field data to be thermodynamically consistent based on the lumped thermal model and the equation based data reconciliation modules.

Outcomes of the project: Tested the model on multiple cases. A Robust model developed which outputs the data for further advanced uses like asset performance optimization, operations optimization etc.

Major Learning Outcomes: Power generation industry, Gas turbines, statistics, data science, thermodynamics.

Brief Description of working environment, expectations from the company: Open-minded and flexible culture, lots of scope for learning, challenging and interesting work.

Name: Satya Akhil Reddy (2013A4PS446H)

Student Write-up

Short Summary of work done during PS-II: To begin with, I was put in the thermal team. I learnt how to develop thermal models in Hypermesh. Later, I was given a task to identify recirculations and the possible causes behind them in two different domains. I used ANSYS ICEM CFD and CFX for these tasks. Currently working on manual calculations of vortex in any cavity by observing crucial parameters.

Tools used (Development tools - H/w, S/w): ANSYS CFX, ANSYS ICEM CFD, Excel, Hypermesh and Powerpoint.

Objectives of the project: To understand the re-circulation pattern and suggest the possible reasons behind it.

Outcomes of the project: Was able to come up with suitable answers for both the cases.

Major Learning Outcomes: Got to learn CFD through practical approach.

Brief Description of working environment, expectations from the company: The Company is spread over a huge area. It has more than 8 buildings with each one housing a separate department. Most of the work is related to turbines. The work life balance is very good. You can work with leisure as there are no restrictions on number of working hours. Sports tournaments, marathons, cultural events etc. will be held. Recreational spaces are also available.Overall, not a stressful environment to work in. Company is mostly interested in Master's students.

Name: Charanya (2012B4A4528H)

Student Write-up

Short Summary of work done during PS-II: Data analytics- SQL development, Database management, ETL Development, Reporting solutions.

Tools used (Development tools - H/w, S/w): SQL Developer, DBeaver, Talend and Tableau.

Objectives of the project: Interface Migration from current obsolete interface to Tableau.

Outcomes of the project: Migrated the interface.

Major Learning Outcomes: Stay away from IT.

Brief Description of working environment, expectations from the company: Bad place to start your career at. At least as far as digital is concerned.Friendly people but not very helpful technically. Won't give you a better project even if you ask.

Name: Rishi Soni (2015H106146P)

Student Write-up

Short Summary of work done during PS-II: I worked on Automatization of Clearance optimization process using new software called iSight which run other software like Ansys, excel, Matlab….etc. in Batch mode to automatically run the analysis and optimize the results.

Here i also worked on Blade out loads analysis and buckling analysis of Gas turbines using Unigraphics NX, ansys workbench and APDL software.

Tools used (Development tools - H/w, S/w): HPC servers, NX-10, Ansys, iSight, Excel.

Objectives of the project: To minimize time consumed in doing the setup of and post processing of Gas turbine analysis.

Outcomes of the project: Saves the time of more than 2 weeks.

Major Learning Outcomes: Learned new softwares like iSight and brushed up the learning of Ansys and excel.

Brief Description of working environment, expectations from the company: Really good campus. Managers and colleagues were really helpful. Good games zone and Gym Facility.

PS-II Station: John F Welch Technology Center (GE), Hyderabad

Faculty

Name: Sreedhar Madichetty

Comments: JFWTC is well known for its R&D in Energy and Power sectors. It includes thermal power station equipment, Gas turbines, Wind energy systems, Power Electronics etc. Industry expects some insight on Ansys and Altium design software's with extensive knowledge on App development. JFWTC most of the works are getting automated using IOT technology and they are calling it as Industrial Internet of Things (IIOT).

Student

Name: Nishant Pani (2013A3PS298H)

Student Write-up

Short Summary of work done during PS-II: EMBEDDED Linux Systems.

Tools used (Development tools - H/w, S/w): Yocto.

Objectives of the project: Testing, Building and Developing.

Outcomes of the project: Testing and building process were completed.

Major Learning Outcomes: Linux, Embedded system.

Brief Description of working environment, expectations from the company: Good.

Name: Akash Kumar Singh (2013A3PS251G)

Student Write-up

Short Summary of work done during PS-II: VB Scripting for relay protection system and testing it on AVTS.Creating MATLAB function for fault frequency calculation.

Tools used (Development tools - H/w, S/w): S/w (Advanced Visual Testing Software, Enervista)

H/w (Relay).

Objectives of the project: Create scripts for features like undercurrent for the relay and test those using AVTS.

Outcomes of the project: Creation of scripts for new relays and their testing to upgrade the existing version of relay protection system.

Major Learning Outcomes: VB Scripting AVTS Troubleshooting of problems faced in automating a relay protection system.

Brief Description of working environment, expectations from the company: Work environment is very good. People here are extremely helpful.

PS-II Station: Mahle Filters India Ltd, Gurgaon

Student

Name: Ajinkya Dhake (2013A4PS259G)

Student Write-up

Short Summary of work done during PS-II: Initially, in the process quality department, I studied various defects, processes and quality control tools.Then worked in Environment and health safety (EHS) department for 15 days until i got the project in production department. In EHS, my main job was to help make reports and assisting in conducting various training programs, like fire safety and other emergency situations. Finally, my project, COPQ reduction, focuses on Dent reduction of the oil filter plant. Everything, from problem identification to solution implementation, was done by me with assistance from my mentor in Mahle. It involved studying the whole process, from procurement of filter bowl to packing the finished filters. The transport and storage processes turned out to be the main reason for dent generation. All this required intense data collection at every stage (i.e. checking around 1000 filters at every stage at a time). Total 18 trials were conducted in the span of 3 months some were for checking whether the implemented solution was working well or not. The solution was as simple as reducing the lot size of every transported unit, for easier and better handling (special focus on height of the bin, effectively reducing the weight supported by every filter at the base). Other reasons like manhandling due to hurry/accidental manhandling of the bins, transport process from supplier etc. are the major contributors to the denting process. At other times, i was helping the quality department with their regular audits and various dimensions checking for quality control.

Tools used (Development tools - H/w, S/w): Vernier Callipers, Height Guage and Dial Guages for runout etc, Microsoft Excel.

Objectives of the project: COPQ Reduction (due to dents in certain products).

Outcomes of the project: 13% reduction in dents within 3 months.

Major Learning Outcomes: Quality Control (Six Sigma green belt level), Problem Solving, Microsoft Excel skills upgraded.

Brief Description of working environment, expectations from the company: The office is well ventilated and well lit environment with good catering service and provided with proper furniture. Being gurgaon, it’s quite hot during summers and quite cold during winters. However the staff is very friendly and helpful regarding everything. It becomes a little chaotic whenever a delegate comes to visit, but it lasts for just a few hours, and the frequency is less too.

Overall, it was a good PS experience, with awesome working culture. I'd definitely call this PS station underrated.

PS-II Station: Mercedes Benz, Bangalore

Mentor

Name: Akhilesh Rao Borra

Designation: Design head. Satisfied with work by students.

Faculty

Name: Raghuraman S .S

Comments: Expectations from industry: Students are expected to be punctual, self disciplined, well mannered, having tolerance to ambiguity, willing to express themselves besides technical skills that BITS is imparting. PS-II intern is supposed to settle down quickly and contribute to the organization in short notice.

Student

Name: Amrith Narayan (2013A4PS166H)

Student Write-up

Short Summary of work done during PS-II: This project in MBRDI, titled 'Electric Motor analysis and simulation, was an effort to improve MBRDI's knowhow on electric powertrains to equip it fordelving completely into the expansive realm of electric vehicles. This is a growing area, considering the necessity to supplant conventional enginescontributing to the fast depletion of fossil fuels and pollution. As we are headed towards a completely electric driven world, electricity seems a promisingand an environment friendly source of vehicle power. The main objective of this project was to take up a specific and the most important electromechanicalcomponent of the electric powertain, namely the electric motor for an in-depth analysis and thorough understanding of its physics and replicate or simulatethe working of one or two specific motor types in commercial softwares, JMAG and Flux. This serves a twofold purpose of software evaluation and motorphysics analysis.

Objectives of the project: Motor analysis and Software evaluation.

Outcomes of the project: Torque analysis in motors. Understanding electrical motors theoretically and mapping with practical motors.Clear understanding of the softwares used in this area.

Major Learning Outcomes: Software knowledge, out of box thinking, application of theory in practice.

Brief Description of working environment, expectations from the company: A very encouraging environment for learning and quality work.Flexibility to work at convenience.Supportive peers and a comfortable working environment. Focus on clear understanding of concepts and application rather than mundane software work.

Name: SANAT VIBHAS MODAK (2012B3A4578G)

Student Write-up

Short Summary of work done during PS-II: The project is centered on developing a method to simulate the massage function offered in car seats. The simulations are required to predict the thermal and mechanical effects of using the seat heating and massage functions simultaneously. This requires an accurate modeling of the foam materials used in seats and their thermal and mechanical properties. The effect of the mechanical loads produced by the occupant load and the massage mechanism were processed, following which the simulations for the seat heating function were performed. The effect of using both the functions simultaneously was observed. The simulation results have been validated with the experimental results.

Tools used (Development tools - H/w, S/w): The preprocessing was done using ANSA. StarCCM+ was used for solving in thermal simulations.

Objectives of the project: Developing a method to simulate the massage function offered in car seats.

Outcomes of the project: A method has been developed to model the seat heating and massage functions when used simultaneously. This method will be used by the company for future simulations.

Major Learning Outcomes: Usage of ANSA and StarCCM+ software, learning about the behavior of foams with respect to heat transfer and mechanical deformation. Aspects of CAE such as preprocessing, meshing etc.

Brief Description of working environment, expectations from the company: The Company has an excellent working environment.

Name: Atul Mishra (2012B1A4654G)

Student Write-up

Short Summary of work done during PS-II: Sensitivity study conducted on FE model of Tibia bone in a 3-point bending test setup. The work pertains to the field of human body modelling which comes under the umbrella of occupant safety in automotive industry.

Tools used (Development tools - H/w, S/w): Software tools- LS-Dyna, ANSA, etc. were used.

Objectives of the project: To evaluate the effect of simulation environment on the results and comparison with experimental results. Also, to obtain the bone response to various conditions as faced during pedestrian impacts.

Outcomes of the project: Simulation results in close agreement with experimentally determined values were obtained with variation of different parameters in the simulation environment.

Major Learning Outcomes: FE modelling of bone, material properties of actual bone and modelling them in simulation, Human Body Modeling, occupant safety in Mercedes-Benz vehicles.

Brief Description of working environment, expectations from the company: The Company has a healthy working environment. The engineers are professional and knowledgeable. State-of-the-art technologies are being worked upon and developed with attention focused to minutest of the details. Everyone is helping to bring freshers up to the level required to perform effectively.

Name: Bhagat Kewlani (2012B4A4573G)

Student Write-up

Short Summary of work done during PS-II: My project was on Automation of complete pre-processing of Mounting Brackets using ANSA for Modal and Static Analysis in NASTRAN and ABAQUS solvers. Pre-processing included meshing of components with different sizes, rigid body connections, assigning material, bolting connections, making washers, contacts, load and boundary condition with Nastran header or Abaqus step definition. My second project was on Multibody Dynamics in which Motionview and Motionsolve had to be explored. Rigid bodies were taken into consideration and basic models like steering of trucks, truck lid and car door were taken into consideration. Then flex bodies were introduced in the same models and stresses were observed and compared to FE analysis done on them. Finally, leaf spring and air bellow suspensions were modeled in Motionview and then they were compared with manual FEA done on them.

Tools used (Development tools - H/w, S/w): ANSA, Abaqus CAE, Hyper view, Motion view and Motion solve, Hyper graph Solvers: Nastran, Abacus.

Objectives of the project: Objective of automation was to reduce time invested in these kinds of repetitive projects so that user can focus better on the results. The objective of introducing Multibody dynamics was that the FE modelling of leaf spring and air suspension takes around 3 days, with Motionview and Motionsolve it can be completed in 5 to 6 hours.

Outcomes of the project: The automation project saved around 90% of the time in these repetitive projects. The results that were obtained using automation were matching with the manual FE within 5% error which was acceptable. Leaf spring and air bellow suspension could be modeled in Motionview which reduced the manual FE work to a great extent.

Major Learning Outcomes: I was introduced to the concept of CAE (Computer Aided Engineering), Python Scripting, Multibody dynamics and importance of automation in industry.

Brief Description of working environment, expectations from the company: Working environment is amazing, research oriented and there is a lot to learn for interns. Interns get to work on new technologies or automating the existing techniques. If someone's work is found extraordinary, their work is shown to counterparts in Germany or Japan too. Overall, it is one of the best companies to start your corporate life in terms of exposure, knowledge or research.

PS-II Station: Mytrah Energy (India) Private Limited, Hyderabad

Mentor

Name: Mr Vivek Kailas

Designation: Executive Vice President, Business Development - Solar

The solar rooftop segment, today, is a highly competitive segment with ever dwindling tariffs. The project undertaken aims to provide ways to improve the efficiency of the solar rooftop business development team at Mytrah Energy and in turn help them bring in more leads. Assisting in the day-to-day activities of the team provided an insight into the current working strategy of the team and helped identify the improvement areas.

Mytrah Energy entered into the solar rooftop sector in October 2015. Mytrah currently operates 500 MW of ground mounted solar projects and 500 kW of solar rooftop projects across 10 states of India.

The business development team at Mytrah consists of 7 people presently and together they handle around 180 leads per month. This means that there is approximately 26 leads per person which, if not organized properly, leads to certain leads not receiving enough attention.

The lead conversion period in solar rooftop segment typically stretches into months and requires frequent engagement to keep the interest of the customer going. This being a relatively new segment, the customer is sometimes skeptical and has a lot of queries with respect to the generation. These queries, if not answered to the satisfaction level of the customer, cause the lead to turn cold.Hence the need for an organization of the leads and easily available generation data.

The students were assigned a project on "Strategy and Business Development for the Solar Rooftop Business of the Company". The objective was to do marketing and strategy and business development for Mytrah's rooftop solutions. The work done by the students is: 1. Market Analysis of Indian Solar Rooftop Industry, 2. Support in financing for rooftop projects, 3. Addition of new leads, support in client engagement, and deal closure, 4. Assistance in building a channel partner and business associate network in different states, and 5. Support in overall business strategy for the solar business.

Business development activities in Mytrah encompass all the stages from lead acquisition to the power purchase agreement signing with the customers.Engaging with multiple leads at different leads results in

inefficient follow ups and lack of attention on some leads. Also, easy availability of solar generation data would be helpful in answering the questions of a potential customer to the best of his/her satisfaction.

Major Achievement: The adoption of a CRM system and development of solar calculators was suggested as a solution to the team.

The students are quite committed to their work.

The company looks for students with a positive bent of mind, ready to learn and contribute.

Faculty

Name: M K Hamirwasia

Comments: Expectations from industry: Sometimes students are involved in the day to day activities of the Organization like the two students at Mytrah Energy, Hyderabad have been preparing B2B DB for the business team.The students at DCPL, Mumbai get to learn and use STAAD. The students at Synergiz, Hydrabad got the opportunity to learn BIM (Business Information Modelling) while working on the Nagpur Metro Rail Project. They also utilized and sharpened their knowledge of project management.

Needless to say, students may not be well versed with all the softwares used by Industry but as long as they are committed to learning, they have the ability to do it in real time. So, Industry is looking for students with an aptitude for learning.

Student

Name: Rajeev R (2013A4PS166H)

Student Write-up

Short Summary of work done during PS-II: I worked with the Strategy and Business Development team. I learnt the basics of solar power plants and a great deal about the solar industry, government policies in India and across the world. I primarily worked on solar rooftop project tenders. I was responsible for preparation of tender documents, scheduling meetings as per the timeline, presenting the tender synopsis etc. I also learnt financial analysis. I also carried out financial analysis of various prospective clients to check their credit worthiness. I also developed a calculator using Excel using solar irradiance data to estimate the electrical units produced at a particular location.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: Perform activities to expand the solar portfolio of the company

Outcomes of the project: - Participated in 4 tenders - Developed a solar generation calculator to estimate units generated for the use of the sales team - Carried out financial analysis of prospective clients.

Major Learning Outcomes: - Learnt financial analysis - Learnt various sales techniques - Experienced the corporate culture.

Brief Description of working environment, expectations from the company: Mytrah has a good mix of young and experienced professionals. I had the opportunity to interact with a few MBA graduates from IIMs and ISB. It helped me gain a different perspective for choosing my career option. The work environment is very relaxed. Everybody is addressed using their first name.

The company has long work hours, and works all 6 days a week. The work is not well defined as the company is still young in the solar sector and they're still trying to get the right balance. You are expected to stay for the entire duration even when there is absolutely no work to be done.

PS-II Station: National Aerospace Laboratories, Bangalore

Faculty

Name: Gyanan Aman

Comments: Expectations from industry: Course requirement: Material science and Engineering, Nanotechnology.

Skills: Advanced characterization technique, basic programming skills, exposure to experimental research.

Student

Name: Abhinav (2012B2A1875H)

Student Write-up

Short Summary of work done during PS-II: Developed oxide coating on Aluminium alloys by electrochemical methods.

Objectives of the project: To form a protective layer on the aircraft aluminium alloy.

Outcomes of the project: The anodizing oxidation process were performed 2024 and 2124 cast alloys with a mixed electrolyte with the composition of 80g/L of tartaric acid and 25ml of sulfuric acid. Oxide layer formed is uniform throughout and meeting the requirements. The thickness, mechanical and corrosion properties were studied by eddy current thickness guage, AFM, salt spray test.

Major Learning Outcomes: Electrochemistry, Material science, Corrosion.

Brief Description of working environment, expectations from the company: Good from the work point of view.

PS-II Station: NBC Bearing, Jaipur

Student

Name: Saurabh Shrivastava (2015h141105P)

Student Write-up

Short Summary of work done during PS-II: Responsible for design of new type of seal provided by customer. Hence to achieve such, carried out DFMEA to know the types of failure mode and their effects on respective components. Outcome of which i.e. FEA analysis for solving interference problems on seal lips and commenting on the torque generated. Further need to estimate the grease leakage test by the help of CFD analysis of rotation cage dipped in grease.

Tools used (Development tools - H/w, S/w): ABAQUS, MAPLE and EXCEL.

Objectives of the project: DESIGN OF DOUBLE SEAL BALL BEARING.

Outcomes of the project: design parameters, contact pressure due to deformation and shearing, liquid pressure due to streamline body.

Major Learning Outcomes: formation of detailed DFMEA, advance knowledge of ABAQUS, how to approach problems in industry.

Details of papers/patents: Going On.

Brief Description of working environment, expectations from the company: Environment was fine. Staff which whom i was appointed was very supportive. They always try to include me in problem solving of any other projects also as well as boost my morale by appreciating my appreciating and modifying my ideas. Only thing which was not up to the mark was the time management as i got my cad model much delayed and they do not had any PC issued to us due to which i faced difficulty in carring out my work in my laptop.

Name: ADITYA SHARMA (2015H141106P)

Student Write-up

Short Summary of work done during PS-II: There was a failure of bearing which are used in differential gear box of the tractor before its predicted life and the preload was previously set by customers and now they want a solution so that it can be preloaded by the manufacturer (NBC). To predict the failure cause and parameters which are effecting the life of bearing are determined by using Design for Failure Mode and Effect Analysis.And the result was loss of rigidity of bearing over time, which is the effect of loss of preload which is caused due to wear of flange and roller face.then we came up with some change in the design of the bearing in which there is less loss of preload when compared.To validate our result we have to perform experimental and model simulation in abaqus. Then the results are compared.

Tools used (Development tools - H/w, S/w): ABAQUS, ANSYS, EXCEL and MAPLE.

Objectives of the project: 1. A loaded bearing from the manufacturer which does not require to preload during its assembly in system. 2. To increase the bearing life.

Outcomes of the project: A loaded bearing from the manufacturer and with the change in the design there was a comparable increment in running life of bearing. As the experimental setup and readings require time so it is not completely done as it is a yearlong project.

Major Learning Outcomes: Profile generation of bearing, failure mode and its effect analysis has been learnt.gained some basic knowledge about bearings and how practical tasting of bearing is done is learned.

Details of papers/patents: Going On.

Brief Description of working environment, expectations from the company: Working environment of the company was friendly and has a good exposure of work that has been done here. My team mates are very supportive and encouraging as they helped me in carrying out my work very efficiently. Sometimes they even included in on going other projects also and appreciated the participents with them.

PS-II Station: Pluss Advanced Technologies Pvt. Ltd., Gurgaon

Student

Name: MANJARI KATIYAR (2015H149246P)

Student Write-up

Short Summary of work done during PS-II: Worked on a Market Research and a Human Resource project which enhanced my analytical and communication skills.I interacted with store managers of big supermarkets and labors working in their manufacturing unit for the purpose of collection of data.

Tools used (Development tools - H/w, S/w): MS Office.

Objectives of the project: 1.To check the feasibility of temperature controlled carry bags in frozen food industry 2.To segregate labors in manufacturing unit according to their skill levels and assess their training needs.

Outcomes of the project: Pluss had a very supportive and cooperative environment.People was open to new ideas and appreciated the work done.

Details of papers/patents: 1.Temperature controlled carry bags were found to be feasible in the market 2.Segregated labors in a skill matrix successfully along with assessment of their training needs.

Brief Description of working environment, expectations from the company: Analytical skills and communication skills goes a long way while working.

PS-II Station: Skoda Auto India Pvt Ltd, Pune

Student

Name: Kirtan Jammalamadaka (2012B4A4952H)

Student Write-up

Short Summary of work done during PS-II: Powertrain Strategy for all Skoda models till 2025. Summary of the global trends in the automotive industry related to future technologies like connected cars, autonomous driving and electric vehicles.

Tools used (Development tools - H/w, S/w): Market Study, Excel, Avon (VW) and DISS (VW).

Objectives of the project: Powertrain Strategy proposal.

Outcomes of the project: Final proposal presentation to top management for implementation.

Major Learning Outcomes: Market analysis, Future trends, Current technologies, important definitions and concepts related to automobiles.

Brief Description of working environment, expectations from the company: Brilliant, challenging and demanding project with an opportunity to present ideas to top management.

PS-II Station: Skoda Auto India Pvt. Ltd., Aurangabad

Student

Name: Mandar P. Chouthkanthiwar (2015H142132P)

Student Write-up

Short Summary of work done during PS-II: My project is about reducing the major defects coming at Audi final vehicle assembly check point by finding their root cause and implementing control actions or preventive measures. These results in fewer cars in repairs hence less WIP inventory and less lead time.I was assigned in Hall C for this project. After positive outcomes, in last month, I have also being told to look for the defects in Hall B.

Tools used (Development tools - H/w, S/w): Plan-Do-Check-Act.

Objectives of the project: Root cause analysis of Scratches, Dents and Contamination of Audi cars.

Outcomes of the project: Significant reduction in said defects. More importantly, the awareness among operators has enhanced regarding the causes and effects of these defects.

Major Learning Outcomes: Resource (man, machine, material) management.

Brief Description of working environment, expectations from the company: Work environment is good comparing with other manufacturing companies. Operators, supervisors are helpful in most of the cases. Expectation from company - Freedom to choose department for doing project should be given. Stipend at Aurangabad location should be raised.

Name: Harshal Shah (2015H142126P)

Student Write-up

Short Summary of work done during PS-II: Alloted tha project in production department where I have to work on root cause analysis, action and monitoring of daily defects and scratches along with that WIP management, lean implementation and standardization of work are the topics alloted to me. While working on these areas I have done kizen activities and standard working procedures for repair work with documentation so that decisions can be made on statistics.

Objectives of the project: Prevent scratch and defects during car production, WIP management and standardization of work.

Outcomes of the project: Reduce the level of scratches and WIP.

Major Learning Outcomes: Man and material management, leadership skills.

Brief Description of working environment, expectations from the company: Working environment is very dynamic and competitive.

PS-II Station: Skoda Auto India Pvt. Ltd., Bangalore

Student

Name: S.VISWANATH (2013A4PS259H)

Student Write-up

Short Summary of work done during PS-II: The project involves visiting Skoda dealerships across Bangalore and analyzing the areas where improvement is possible and coming up with action plans. It also involves addressing various customer concerns and preparaing and monitoring daily reports.

Objectives of the project: Improvement in aftersales.

Outcomes of the project: Analyzed possible gap areas.

Major Learning Outcomes: Improved communication and management skills, basic technical knowledge on cars.

Brief Description of working environment, expectations from the company: The office is based in Manyata Tech Park and has an extremely relaxed working environment. The boss Mr. Saurav Prakash treats you as a part of his team and expects you to work alongside various area managers. Timely preparation of reports is expected. One can freely ask what one wants or expects from the project and the boss will gladly help you out. You will also be asked to visit dealerships in Bangalore alongside area managers which is a good learning experience.

PS-II Station: Skoda Auto India Pvt. Ltd., Mumbai

Student

Name: Harish Reddy Gavva (2013A4PS368H)

Student Write-up

Short Summary of work done during PS-II: Analysing the concerns on a daily basis.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Increasing customer satisfaction index.

Outcomes of the project: The concerns count decreased by around 15% in 5 months.

Major Learning Outcomes: Exposure to the automobile industry.

Brief Description of working environment, expectations from the company: Working environment is average and the work is very normal and repititive the learning opportunities are very less and the work is not challenging.

Name: Kunal Barapatre (2013A4PS357P)

Student Write-up

Short Summary of work done during PS-II: Worked on ways to enhance the efficiency of workshops to deliver cars on the same day after periodic repair.Created tools to track manpower productivity, enabling the management to focus on time consuming jobs and manpower.

Tools used (Development tools - H/w, S/w): Excel-VBA.

Objectives of the project: Identifying parameters affecting same day delivery rate and coming up with probable solutions.

Outcomes of the project: Tools have been established to track manpower productivity.

Major Learning Outcomes: Key parameters to track the performance service sector in automobile industry.

Brief Description of working environment, expectations from the company: The office environment is quite comfortable. Mentors are helpful and enthusiastic. Stipend is low and should be increased.

Name: Piyush Rathore (2013A4PS558P)

Student Write-up

Short Summary of work done during PS-II: At Skoda I have worked with Service Planning team in After Sales department. I was majorly employed with working on the special tools and workshop equipments. Preparation of first hand draft of tool kits for upcoming vehicles.Contacting the dealers for their requirement of special tools. Preparation of kits, invoicing and dispatch.

Tools used (Development tools - H/w, S/w): While working on my projects, I have mostly worked on the excel sheets. Apart from that the other tools which I have used are the web portals of the company to access the required data.

Objectives of the project: Daily pending cars in service outlets, Preparation of initial tool kit for upcoming vehicle Kodiaq, Modification in EA189 campaign dashboard, Special Tools liquidation at Aurangabad warehouse

Outcomes of the project: Prepared the tracker to track the no. of cars pending in service outlets. Made the first hand draft of the tool kit for Kodiaq. Updated EA189 dashboard with all affected VINs details. Distributed the tools at warehouse to the dealers as per their requirement.

Major Learning Outcomes: Learnt about the service processes, gained knowledge about initial tool kit and got to work on the tool kit of upcoming vehicle, Kodiaq.Got to know about the recall campaigns for repairs and services, dealing with the dealers, various MS-Excel tools.Since I have supervised for manpower so I tested my management and communication skills. Learnt planning and decision making skills. Got exposure to the tools on which I have worked on theoretically.

Brief Description of working environment, expectations from the company: Working environment is very good here. Work is not at all hectic. People are very helping. Mentors are really kind. The only thing which didn't go as per expectation was the type of work I got. The quality and quantity of the work does not match the standard of an engineer since the work is not very skill-based.

Name: Digvijay Singh (2013A4PS350P)

Student Write-up

Short Summary of work done during PS-II: Automation of excel work using VBA, Spare parts pricing.

Tools used (Development tools - H/w, S/w): VBA, R.

Objectives of the project: To reduce process time.

Outcomes of the project: Reduced process time by 98%.

Major Learning Outcomes: VBA, R.

Brief Description of working environment, expectations from the company: Quality of work is poor.Stipend is too less. No proper place for interns to sit

.

Name: R Prasanna Malavika (2012B2A4677H)

Student Write-up

Short Summary of work done during PS-II: Generating periodic reports on analysis of overall customer satisfaction based on post-service feedback calls; Creating and maintaining dashboard for monitoring recall campaigns to track and analyze campaign progress with respect to dealers, area managers, models and zones; Performing in-depth analysis to identify most recurring part failures; Creating the body& paint repair manual for use by service technicians.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: Monitoring recall campaigns, Overall Customer Satisfaction Analysis.

Outcomes of the project: Faster campaign completion.

Major Learning Outcomes: Exposure to Auto industry, Data analysis on MS Excel, Various aspects of the after-market.

Brief Description of working environment, expectations from the company: Working environment: People are helpful and encouraging, work is a data-intensive, daily task can get slightly repetitive, good learning-curve, MS Excel proficiency will develop.

Expectations from company: Interns should have a thorough understanding of mechanical engineering concepts, especially with respect to automobiles. Interns should also be comfortable with data-handling and working with large spreadsheets.

PS-II Station: Spicer India Ltd., Pune

Student

Name: Amit Kumar (2013A4PS407G)

Student Write-up

Short Summary of work done during PS-II: Excel programming, PFMEA analysis by creating SOP, HEI, HEP.

Objectives of the project: Quality control.

Outcomes of the project: PFMEA Anlysis.

Major Learning Outcomes: Total quality management.

Brief Description of working environment, expectations from the company: SOP are created, they are analysed to find out human errors. Error prevention methods are devised.

PS-II Station: Synergiz Global, Hyderabad

Faculty

Name: M K Hamirwasia

Comments: Expectations from industry: The students at Synergiz, Hydrabad got the opportunity to learn BIM (Business Information Modelling) while working on the Nagpur Metro Rail Project. They also utilized and sharpened their knowledge of project management.

Needless to say, students may not be well versed with all the softwares used by Industry but as long as they are committed to learning, they have the ability to do it in real time. So, Industry is looking for students with an aptitude for learning.

Student

Name: M Vishal Reddy (2013A2PS444H)

Student Write-up

Short Summary of work done during PS-II: The training included completing assignments related to planning, scheduling and monitoring the progress of the projects. The topics learnt during the training were related to Project Management discipline of Civil Engineering and software's like Excel, Tableau and MySQL which are used for data analytics. I was also tasked with checking and compiling the tenders for projects that the company might be interested in.

Tools used (Development tools - H/w, S/w): MS Office, MySQL and Tableau.

Objectives of the project: To improve the project monitoring and progress reporting process.

Outcomes of the project: A new product is under development which can handle monitoring and reporting more efficiently than excel.

Major Learning Outcomes: Learning new softwares.

Brief Description of working environment, expectations from the company: This internship has been an excellent and rewarding experience. The past months of my internship have been very instructive for me. I have been able to meet and interact with so many people. Synergiz Global has offered me opportunities to learn and develop myself in many areas.

Name: Kiranmayi C V S P (2013A2PS557H)

Student Write-up

Short Summary of work done during PS-II: Construction Project Management and Consulting in the Infrastructural domain with prime focus on Airports, Railways and Metros

Tools used (Development tools - H/w, S/w): MS Office, SQL and Tableau.

Objectives of the project: (1) Gain knowledge on the on-going projects of the copany. (2) To improve project progress monitoring and reporting.

Outcomes of the project: A new product of the company is under development which is a better and enhanced substitute to Excel which was used until now for progress monitoring.

Major Learning Outcomes: (1) Practical knowledge on Project Management. (2) Managing the raw data collected on site and reporting it to the clients in an organized, comprehensive way using tools like Tableau. (3) Exposure to the contractual phases of projects - tenders, proposals, bidding etc. (4) 5D BIM. (6) Learning new softwares.

Brief Description of working environment, expectations from the company: The back-end office comprises of around 10 employees. Friendly employees, supportive and guiding mentors.

PS-II Station: Tata Autocomp Systems Ltd., Pune

Student

Name: Pankaj Jadhav (2015H142135P)

Student Write-up

Short Summary of work done during PS-II: Cost saving analysis of electrification work at chakan. The project involves negotiation meetings with respective suppliers. Preparing target letters, LOI and following up on the matter with suppliers.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: To choose the best supplier for the outsourced work. To achieve cost saving.

Outcomes of the project: Significant cost saving is achieved. Lead time to procure materials is reduced as the total work is outsourced to single supplier.

Major Learning Outcomes: Learnt various terms and procedures used in outsourcing.Learnt about how to negotiate with suppliers.Learnt about company culture and code of ethics. Learnt how theoretical knowledge is different from what is actually followed in the organization.

Brief Description of working environment, expectations from the company: Working with supportive mentor and co-workers lead to good working environment. My mentor did not give me unnecessary pressure of work until and unless there was a real need. I expected to get more exposure of the things related to the project but couldn't. Also the work was more of sitting at one place and working on excel. I expected to get involved with technical team but they didn't involve me. My work was confined to only purchase. I wanted to learn more about delivery of material, stocking, inventory management and installation of things at site.

Name: Kaustubh Kumar (2011B5A4402G)

Student Write-up

Short Summary of work done during PS-II: Operations Support and Implementation of Digital Marketing for e-Learning Platform.

Tools used (Development tools - H/w, S/w): Microsoft Excel.

Objectives of the project: Operations Support and Implementation of Digital Marketing for e-Learning Platform.

Outcomes of the project: Digital Marketing implemented.

Major Learning Outcomes: I learnt:

1. What to look for in a marketing agency.

2. Negotiations.

3. That I am not an individual or even a person, just a resource to be exploited.

4. How to work as a team.

Brief Description of working environment, expectations from the company: Supportive co-workers, but no real application or use of my engineering/science courses.Just Excel busy-work. But people generally leave you alone as long as you do your work and fulfill your responsibilities.

Name: MITTA NAVEEN KUMAR REDDY (2013A4PS214G)

Student Write-up

Short Summary of work done during PS-II: I have allocated to the Tata ficosa hinjewadi plant in pune.my work is to do the cost sheet analysis and review of the existing and new vendors and negotiate them to reduce the cost of the parts required for company.

Objectives of the project: Reduction in cost of the parts by cost sheet analysis and rationalization.

Outcomes of the project: Reduction in cost.

Major Learning Outcomes: Exposure to the job culture before getting in to it.

Brief Description of working environment, expectations from the company: The Company I worked is Tata ficosa hinjewadi .Everyone in the company is supportive and helped me to do the project with ease.

Name: Sourabh Sanjay Jadhav (2013A4PS358G)

Student Write-up

Short Summary of work done during PS-II: project objective was to replace lighting in plant by LED so that energy costs can be brought down, payment term for project was ESCo mode that is EMI mode where there is no upfront investment and all EMI's are paid entirely out of savings we achieve in energy readings.

Tools used (Development tools - H/w, S/w): Microsoft excel.

Objectives of the project: Cost saving on energy expenditure by replacing conventional lighting by LED through ESCo mode.

Outcomes of the project: Project still in execution.

Major Learning Outcomes: Microsoft excel, purchase process in an organization.

Brief Description of working environment, expectations from the company: Working environment was good, people were supportive and cordial, but a project in core engineering was expected which was not alloted.

PS-II Station: Tata Motors Ltd., Dharwad

Student

Name: Jathin Dhulipalla (2012B5A4657H)

Student Write-up

Short Summary of work done during PS-II: Allotted to LCV Assembly line in Dharwad plant. My work could be divided into two separate projects.

The first one is "Identification and Elimination of Human Errors". When manual work is involved, majority of the errors arise owing to mistakes of operators which waste precious resources - time and material. LCV Shop being versatile in dealing with 16 kinds of models had more scope of such errors happening. My task was to identify such errors and suggest means to prevent them from happening or to minimise their effects.

The second was "Increasing the Productivity of Muffler Subassembly". The migration to completely BS4 models meant more work content than previous BS3 models particularly in case of Muffler subassembly. My objective was to reduce the cycle time for each assembly. This was possible by changing the layout of assembly, modifications to assembly process, designing and introduction of new kitting stations and implementation of milk run system.

Objectives of the project: 1. Identification and Elimination of Human Errors in assembly line.

2. Increasing productivity of Muffler Subassembly.

Outcomes of the project: 1. Identified and suggested methods to be put in place.

2. Successfully reduced cycle time of Muffler Subassembly.

Major Learning Outcomes: Manufacturing principles, Project management, Concepts and Importance of Lean Manufacturing.

Brief Description of working environment, expectations from the company: Exciting, energetic and efficient workforce.Extremely unsystematic work week.Poor quality of Canteen food. Expectations: More project review meetings, work rotation.

Name: Hemanth (2013ABPS907H)

Student Write-up

Short Summary of work done during PS-II: Designed and made 16 Tire trolleys for the assembly of light commercial vehicles. Data base collection and management for the pick to light system in our shop.

Tools used (Development tools - H/w, S/w): File Zilla, Excel, Power point, PTC Creo Elements

Objectives of the project: To make a pair of tire trolleys in LCV shop, DATA collection and editing for pick to light system

Outcomes of the project: 1. Identified and suggested methods to be put in place 2.Successfully reduced cycle time of Muffler Subassembly.

Major Learning Outcomes: Manufacturing principles, Project management, Concepts and Importance of Lean Manufacturing.

Brief Description of working environment, expectations from the company: Exciting, energetic and efficient workforce.Extremely unsystematic work week.Poor quality of Canteen food. Expectations: More project review meetings, work rotation.

PS-II Station: Tata Motors Ltd., Lucknow

Student

Name: Prithu Mitash (2013A4PS392P)

Student Write-up

Short Summary of work done during PS-II: My project is based on 'Do It First Time Right (DIFTR) Initiative'. This project is to establish a procedure to measure DIFTR for manufacturing shops, to eliminate defects in upstream, downstream and the current processes and strengthen No-touch concept so as to roll out First time right vehicles and aggregates.

The project's prime agenda is to establish manufacturing self-process assurance through operations standardisation in the Work Instruction Sheet (WIS), inspection of quality based on Quality acceptance standards and clear definition of defects and mapping in the check-sheet.

Tools used (Development tools - H/w, S/w): The basic tools required are MS excel, problem solver, knowledge of engineering drawings, tools of quality like control chart, run chart, Pareto diagram, cause and effect analysis, histogram and scatter diagram.

Objectives of the project: The basic objective is to attain self process assurance, roll out defect free vehicle from shop and removal of quality gates in manufacturing line after exit criteria confirmation.

Outcomes of the project: Developed action plan to tackle defects in sub-structure line of the body shop through effective FMEA, defects arising out of management-operator communication is reduced, DIFTR index reached the optimum level.

Major Learning Outcomes: Learnt how to design work instruction sheets, DIFTR checksheets, Control Plan and other important tools for quality improvement.

Brief Description of working environment, expectations from the company: The working environment in Tata Motors is excellent. The people are appreciated for good work and are constantly urged to improve their skills. It is better to choose production engineering department as it gives hands-on experience with the actual processes in manufacturing a vehicle and has less work related to planning and documentation. It also helps one to co-ordinate better with the operators and learn brilliant things from the supervisors.

I think I was looking for exposure in core manufacturing field so that I can add to my skill set which would help me greatly in my endeavour to work in R&D sector. This industrial exposure has been a very good learning curve and has taught me how to carry myself in the corporate environment.

Name: Vattigunta Srinivas Prasanth (2012B2AB878H)

Student Write-up

Short Summary of work done during PS-II: 1. Fixture validation reports 2. Poka yoke reports 3. Shimming reports 4.validation of spot weld plans.

Objectives of the project: Finalization of spot welds defects on signa line in tata motors.

Outcomes of the project: Quality of welding can be enchanced.

Major Learning Outcomes: 1.Types of errors regarding welding, 2.types of welding and their parameters, 3. Types of machines that are required to run an assembly line.

Brief Description of working environment, expectations from the company: Company expects us to be involved on the shop floor and make reports and help the mentor with what ever work which is related to the project.

Name: Yanamala Gnandev (2012B4AB388H)

Student Write-up

Short Summary of work done during PS-II: Studied all the parts of P2 axles and made inspection plans for the critical parts and critical dimensions in each part. Also programmed for measuring these dimensions of all the parts in PC-DMIS for CMM.

Tools used (Development tools - H/w, S/w): S/w: PC DMIS, H/w: CMM, Hardness Tester, Gauges like Vernier, Height gauge, Snap gauge etc.

Objectives of the project: Characterization of criticality of P 2 axle parts.

Outcomes of the project: Studied critical dimensions and parts. Programmed the code for measuring each part for CMM.Made an analysis of errors in dimensions of each part.

Major Learning Outcomes: Studied the process of Axle assembly.Learnt operation of CMM and its software PC-DMIS. Also learnt making inspection plans for criticality.

Brief Description of working environment, expectations from the company: Working environment is suitable for those who wish to continue in the field of automotive industry. Our mentors interact with us regularly and sort out the problems and doubts we face. HR department is also very responsive for any issues we face.

PS-II Station: Tata Motors Ltd., Pantnagar

Student

Name: Arshad Latif Saikia (2013ABPS494P)

Student Write-up

Short Summary of work done during PS-II: My work at Tata Motors, Pantnagar has three major components - Standardized Work in the M&HCV (Medium and Heavy Commercial Vehicles) shop and assembly shop 1B, Defect documentation of the New Product Introduction, and to collate and analyse data gathered from customer interaction for Commercial Vehicles from all over India. The data collected from the customer interaction are used to understand the quality issues faced by customers in both products and services.

Objectives of the project: To reduce defects, minimize fluctuations in Man, Machine, Method, and thereby improve quality.

Outcomes of the project: Reduction in wastes and work load balncing; Errors identified that rose for the New Product; Insights from the data gathered were put forward.

Major Learning Outcomes: To tackle issues in manufacturing and manpower management; How to gather information and to observe opportunities for improvements; to learn to see patterns in data.

Brief Description of working environment, expectations from the company: The working environment is conducive to personal growth and in gaining knowledge. With intense focus on structure and hierarchy; but is not sound in terms of professionalism. Interns are last in the pecking order and hence might find it difficult to adjust coming from a more open environment as in college.

Name: KAMINENI VARUN (2013ABPS645H)

Student Write-up

Short Summary of work done during PS-II: i have been assigned to work on standardisation in engine shop of my plant. My work is to find and eliminate muda's(wastes) and reduce operators working if possible.There are usually 7 types of muda's(wastes) which are Motion,waiting,inventory,over processing, over production, transportation,defects. Tata motors have a defined methodology to achieve standardisation and i have followed the same and resulted in reducing wastes and operators.

Objectives of the project: Objective of my project is to learn about standardisation and eliminate muda's (wastes) if any and achieve standardised work.

Outcomes of the project: Reduction of operators.

Major Learning Outcomes: Standardisation, work culture, of a manufacturing plant and challenges faced by it.

Brief Description of working environment, expectations from the company: Tata motors has a very friendly working environment where you can find people willing to clear your doubts without hesitation and helping you to understand the working culture as we are new to it. Reviews are conducted by the company to ensure that we are learning, understanding and achieving the work that we have been assigned to and help us increase our skills to present ourselves.Company provides Breakfast,lunch and transportation to interns. Overall it's a good experience to work and learn in TATA motors.

PS-II Station: Tata Motors Ltd., Pune

Student

Name: Sarvesh Sortee (2013A4PS093P)

Student Write-up

Short Summary of work done during PS-II: The key task was to identify areas of improvement on the stations of the production line. This involved observing and analyzing the work, layout and the manpower at each station and then identifying and eliminating waste of material and resources. I spent most of my time on trying to improve the overall productivity of the lines by performing line balancing. I also spent considerable amount of time improving and maintaining the documentation of activities at the stations.

Objectives of the project: Implementation (or revision) of Standardized Work.

Outcomes of the project: Improved overall productivity of assembly lines in my department.

Major Learning Outcomes: Experience and knowledge about how the production in automobile plant is managed. There is nothing to learn on the technical side.

Brief Description of working environment, expectations from the company: The people, especially the operators on the production lines were mostly helpful and cooperating.

Name: Siddhartha Govilkar (2012B4A4452G)

Student Write-up

Short Summary of work done during PS-II: Reduction of warranty issues in Rack and Pinion Steering system in Tata Storme and Sumo Gold. Used six sigma tools for analyzing failure modes, devising root causes and implementing corrective actions.

Tools used (Development tools - H/w, S/w): Microsoft excel and Microsoft PowerPoint.

Objectives of the project: To reduce rack and pinion failures and thereby reduce warranty costs incurred to the company.

Outcomes of the project: Reduced IPTV (Incidents per thousand vehicles) and EPV (Expense per vehicle) for Storme and Sumo Gold vehicles.

Major Learning Outcomes: Power steering systems, rack and pinion mechanism, handling of field issues.

Brief Description of working environment, expectations from the company: Working environment is quite bad. Wasn't given any meaningful project till the beginning of March. There are no sick leaves too, the stipend gets cut on taking a leave.

No system was allotted to me and even I wasn't allowed to get my laptop. For the initial 1 month, I did not even have a chair to sit in my department.

Name: Praneeth AG (2013A4PS270H)

Student Write-up

Short Summary of work done during PS-II: Worked on warranty reduction of fuel level sensors.

Objectives of the project: Warranty reduction of fuel level sensors.

Outcomes of the project: Data analysis.

Major Learning Outcomes: How to survive in the corporate world.

Brief Description of working environment, expectations from the company: Working environment is ok. Nothing much to learn. Haven't used even a tiny bit of what I've studied for the last 4 or 6 years.

Name: Tanmay Gupta (2012B2A4623G)

Student Write-up

Short Summary of work done during PS-II: My project was on implementing standardized work in the new H7 engine assembly. I was required to document the processes at each workstation and identify muda (waste) and non value added sequences. After eliminating them, I had to make new standards for the processes involved in the assembly. I was also involved in complimenting projects such as lineside storage elimination and quality improvements in the assembly line.

Objectives of the project: Standardize the existing processes in the assembly.

Outcomes of the project: New standards made after eliminating non value added sequences.

Major Learning Outcomes: exposure to industrial and operations management.

Brief Description of working environment, expectations from the company: Tata motors being a very large company will provide excellent exposure of the Indian automotive industry and practices. However, one can mostly expect projects in the industrial engineering domain with little to do with technical skills, with a couple of projects as exception. But one can not expect a hardcore R&D environment or work culture. Work would involve a lot of time being spent on documenting and filling up excel sheets which does little help in one's learning. One can expect a professional environment and exposure to automotive industry with average food and facilities.

Name: Parikshit (2013ABPS387P)

Student Write-up

Short Summary of work done during PS-II: Standardization of the camshaft and small parts line of engine assembly. This involves video shooting for each working station and updating the previously made excel sheets.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Standardization of D6 Line.

Outcomes of the project: Standardized work process.

Major Learning Outcomes: Excel proficiency.

Brief Description of working environment, expectations from the company: Company works more like a govt company. Because of extra workforce no one is ready to do work and expects the other person to finish the whole work.

PS-II Station: Tata Motors, Jamshedpur

Faculty

Name: Arun Maity

Comments: Expectations from industry: The students should have done the courses on Quality Management and Industrial Engineering. Student should be aware of CATIA, PLM software. Industrial Engineering course should be included in the course curriculum.

Student

Name: Pranav Kumar Gautam (2012B5A4533G)

Student Write-up

Short Summary of work done during PS-II: To improve FSOK for Engine assembly and testing (DRR), to create HIRA, PFD and FMEA documents according to TS/TMPS standards along with routine activities involved in production like Andon, Jishu - Hozen, Line balancing etc.

Objectives of the project: To create PFD, FMEA and HIRA according to TS standards, to improve DRR for assembly.

Outcomes of the project: PFD, FMEA and HIRA created. DRR is above current target.

Major Learning Outcomes: Design and Process Failure mode analysis, Root cause analysis, Ishikawa diagram, Production Engineering, Occupatinal Health and Safety standards and HIRA.

Brief Description of working environment, expectations from the company: Tata Motors Jamshedpur is a CVBU (commercial vehicle business unit) with Trucks produced here. The plant is good and has all the latest machines and technology where required. Just hope to get a good and supportive manager and you will learn a lot.

PS-II Station: Thornton Tomasetti, Mumbai

Faculty

Name: M K Hamirwasia

Comments: Expectations from industry: In general, the students are good in adapting to the new learning environment. However, there are situations where students are not prepared in advance as the requirements in Industry are varied and latest eps. In terms of using certain softwares and operating certain equipment/machinery. For example, the student working in CRRI (Abhinav Jain working on Indian Highway Capacity Manual Project) got the opportunity to learn visim software. Another student (Parth Pareek working on Marshall Mix Design Project) got the opportunity to learn and work with an MR Machine. Likewise, students in Aurigo Software, Bangalore are first trained on Aurigo Masterworks which is company proprietary software. From this it is evident that students will always have new surprises in terms of learning and contributing in Industry. One of the two students in B G Shirke, Pune (Neha Damle working on a Building Project) had the opportunity to become proficient in the use of softwares like ETABS and Planview. Likewise, one of the two students in vConstruct, Pune (Aitha V. working on BIM Coordination Project) got the opportunity to learn and use softwares like Navisworks, Revit, Sketchup, Bluebeam revu and so on. Sometimes students are involved in the day to day activities of the Organization like the two students at Mytrah Energy, Hyderabad have been preparing B2B DB for the business team.The students at DCPL, Mumbai get to learn and use STAAD. The students at Synergiz, Hydrabad got the opportunity to learn BIM (Business Information Modelling) while working on the Nagpur Metro Rail Project. They also utilized and sharpened their knowledge of project management.

Needless to say, students may not be well versed with all the softwares used by Industry but as long as they are committed to learning, they have the ability to do it in real time. So, Industry is looking for students with an aptitude for learning.

Student

Name: Devesh Rajpal (2015H143044P)

Student Write-up

Short Summary of work done during PS-II: I was mainly involved into Shop Drawing Review work for various overseas RC and Steel Building projects. I also got an opportunity to peer review ETABS model, Columns and Link Beams of one of the Indian projects. I attended all weekend trainings and seminars organized at TT which helped me improve my conceptual and software skills.

Objectives of the project: Shop Drawing Review, Peer Review.

Outcomes of the project: As I was mainly involved into Shop Drawing Review projects so I learnt a lot from them like detailing for structural components, visualization skills etc. which I think is prerequisite for structural engineer when he/she actually designs a structure. From peer review project, I learnt what all should be the critical areas to be reviewed efficiently where designer can commit mistakes.

Major Learning Outcomes: As I was mainly involved into Shop Drawing Review projects so I learnt a lot from them like detailing for structural components, visualization skills etc. which I think is prerequisite for structural engineer when he/she actually designs a structure. From peer review project, I learnt what all should be the critical areas to be reviewed efficiently where designer can commit mistakes.

Brief Description of working environment, expectations from the company: Working environment is excellent at TT. Each and every employee working here is always ready to help out with the problems. I think they should give a bit design work as well along with the shop drawings.

Name: SARANYA P (2015H143045P)

Student Write-up

Short Summary of work done during PS-II: I worked on reviewing structural steel and concrete structures shop drawings of various projects. I worked on Checking Steel Connections calculations package of a New York Project.

Objectives of the project: Shop Drawing review, Connections Calculation package checking.

Outcomes of the project: Learnt the reinforcement detailing of various structural elements such as columns, shear wall, footings etc. Various types of structural steel connections, structural elements like beamand columns etc. pieces before erection were checked. Learnt about the connections design for Moment- flanged, Shearand Gusset to bracings as per AISC Manual 14.

Major Learning Outcomes: Learnt the reinforcement detailing of various structural elements such as columns, shear wall, footings etc. Various types of structural steel connections, structural elements like beam and columns etc. pieces before erection were checked. Learnt about the connections design for Moment- flanged, Shear and Gusset to bracings as per AISC Manual 14.

Brief Description of working environment, expectations from the company: The working environment is really good. Every employee is very much valued and can ask help from anyone without hesitation. They are very much ready to clear your questions. There are no hard and fast timings about breaks and entry or exit time. We are open to access all documents about every project of the company and get to know about it.

PS-II Station: vConstruct Private Limited, Pune

Faculty

Name: M K Hamirwasia

Comments: Expectations from industry: Likewise, one of the two students in vConstruct, Pune (Aitha V. working on BIM Coordination Project) got the opportunity to learn and use softwares like Navisworks, Revit, Sketchup, Bluebeam revu and so on.

Student

Name: AITHA VEERASRUJAN (2015H130061P)

Student Write-up

Short Summary of work done during PS-II: BIM coordination is to predict and resolve clashes before construction of building. Proposal modelling to model every component in building.

Tools used (Development tools - H/w, S/w): Navisworks, Revit, sketchup.

Objectives of the project: Detection of clashes, modeling.

Outcomes of the project: can reduce clashes before construction.

Major Learning Outcomes: Navisworks, Revit, sketchup.

Brief Description of working environment, expectations from the company: Good, but it is under DPR company which is belong to U.S. so if any modifications or new rules implemented in U.S that may effect this company and vConstruct doesn't have any project's in India.

PS-II Station: VESTAS TECHNOLOGY LTD., Chennai

Mentor

Name: Pradeep Zingade

Designation: Project Head - R&D

Pradeep is very pleased with the work done by students. He had give PPO for 2 of students and consultancy job was offered to other 2 students.

Faculty

Name: S.Raghuraman

Comments: Expectations from industry: Working environment is really great. Everyone is supporting and make you fell one of them. The manager will not hesitate to give you responsibilities and there is nothing holding you back from learning as much you can. You can set your own limits on leanings and you can achieve them with proper efforts and dedication.

Student

Name: Arveen Arora (2015H141042H)

Student Write-up

Short Summary of work done during PS-II: For the whole duration of PS2, we handled different projects of varying complexities. The projects were undoubtedly challenging. Vestas adheres to Six-Sigma design process hence the internship is the most valuable achievement for any fresh M.E. graduate looking for a successful career as a Design Engineer.

Objectives of the project: Load verification and certification in upgraded version of a wind turbine.

Outcomes of the project: New standard variant of a wind turbine.

Major Learning Outcomes: Learned about loads on wind turbine.

Brief Description of working environment, expectations from the company: I had a great experience in Vestas Technology, R&D and Chennai. From the first day they have given respect as a Post-Graduate Interns, they have given us same welcome as any other employee get in the company. The induction process was very good. The working environment of the company was also very good, it's not like other companies that we cannot engage ourselves in other department but instead other teams are also friendly to talk to clarify our doubts. Our team was very technical and the knowledge they have was outstanding, even their attitude towards us was like a colleague. In my initial period of internship I received a very good knowledge of Wind Turbines, its working and many other related design aspects. The training sessions were technical and have given much learning to start with, as the projects were interesting and of our field (which we have opted in Technical Courses). Our team has helped me a lot while completing the tasks. And in the end I must thank BITS for providing this opportunity. I think this type of initiative has never been taken earlier and now as they have started to get in contact with the BITS-Alumni they must maintain this relationship with the companies. It will be very helpful for our juniors also. And I should also thank Prof. S. Raghuraman for his guidance in all aspects. As I was new in this city, Chennai, he has helped me a lot. And he has also helped in technical level also. It's been a very good experience in this company. All the best for my juniors!

Name: Krishna Chaitanya Gantasala (2015H141046H)

Student Write-up

Short Summary of work done during PS-II: My main area of focus during the period was "Modelling and Optimization of Wind Turbine". Apart from that, calculation of wind turbine system level loads as per IEC standards, power curve and noise levels for new products and devise strategies to maximise power production by employing different load mitigation strategies to enable turbine suitability for site conditions. Develop and execute customer/site specific corrective action plans as needed to mitigate business risk resulting from performance shortfalls. Also, worked with tool development engineers and third parties to automate and simplify Mechanical Loads Analysis (MLA) tools and processes to help define strategies for faster analysis.

Tools used (Development tools - H/w, S/w): Flex5, HAWC2, HAWCSTAB2 and Matlab.

Objectives of the project: The main objectives are: (1) To model a Wind Turbine using Finite Element Method (FEM) and also, through Dynamics approach (reduced DOF model) and find the optimum method thereby comparing the efficiency of both the methods. (2) Optimization of Wind Turbine with respect to Site-Specific Conditions.

Outcomes of the project: Dynamics approach (reduced DOF model) is comparable to FEM and gives satisfactory results with greater efficiency in less time, thereby helping in Parametric Studies.

Major Learning Outcomes: Finite Element Modelling, Aerodynamics, Dynamics and Vibrations

Brief Description of working environment, expectations from the company: VESTAS is the World Leader in Wind Turbine Generators (WTG). It is known for its expertise in designing WTGs for the complex scenarios and optimising power generation. Very few companies welcome Post-Graduate students for internships. I would like to thank BITS for providing me this opportunity, in Vestas, Research & Development (R&D), and Chennai. Beginning from the first day of internship, I was treated no less than Vestas employee, with introduction to the entire team and good induction process. Lot of technical orientation sessions by Experts took place which helped me gaining considerable amount of knowledge regarding working of wind turbines, and many other design aspects. The team always welcomes doubts and I was no hesitant in clarifying the same, which helped me so much in the long run. The team here is a fantastic team with loads of experience, high level of expertise and very competent in nature. The

projects I worked on were undoubtedly challenging technically. I was directly able to co-relate the courses learnt as a part of my Master's, while working on different projects. Apart from the technical aspects, VESTAS helped me to grow as a professional, maintaining a good relationship with colleagues from different teams. It also helps gaining inter-disciplinary knowledge, as no individual is restricted to learn from other teams. Internship at VESTAS is the most valuable achievement for a Mechanical Post Graduate as a fresher, wishing to excel as a Design Engineer. VESTAS also considers interns, depending on their performance as the first priority, for the openings, if at all at the end of internship period. Nevertheless, internship at VESTAS is highly recommended to every individual, as it is a great learning curve which helps to grow both technically and professionally.

Name: Ashwin Kulkarni (2015H141041H)

Student Write-up

Short Summary of work done during PS-II: It was a great experience. Work was same as that is for a standard employee.

Tools used (Development tools - H/w, S/w): Vestas Turbine Simulator (VTS) (modified from flex5), MATLAB, HawkStab, and Hawk2.

Objectives of the project: Wind Turbine Optimization.

Outcomes of the project: Successfully optimised the wind turbine according to the customer requirement.

Major Learning Outcomes: Learnt the basics of wind turbines, basic load calculations involved, aerodynamics of wind turbines.

Brief Description of working environment, expectations from the company: Working environment is really great. Everyone is supporting and make you fell one of them. The manager will not hesitate to give you responsibilities and there is nothing holding you back from learning as much you can. You can set your own limits on leanings and you can achieve them with proper efforts and dedication.

PS-II Station: VMS (Vakil Mehta Seth) Consultants Private Limited, Mumbai

Faculty

Name: M K Hamirwasia

Comments: Expectations from industry: The students should have done the courses on Quality Management and Industrial Engineering. Student should be aware of CATIA, PLM software. Industrial Engineering course should be included in the course curriculum.

Student

Name: HARISANKAR S (2015H143022H)

Student Write-up

Short Summary of work done during PS-II: Design analysis and planning.

Tools used (Development tools - H/w, S/w): Etabs Sap Safe Staad.

Objectives of the project: Construction of building.

Outcomes of the project: Building.

Major Learning Outcomes: Design and analysis.

Brief Description of working environment, expectations from the company: Good workimg environment friendly engineers.

Name: Yunus Mohammed (2015h143024)

Student Write-up

Short Summary of work done during PS-II: Preperation of design sheets, analysis and design of various structures such as industrial buildings, chimneys, residential and commercial buildings.

Tools used (Development tools - H/w, S/w): Staad pro, Etabs, SAFE, excel macros.

Objectives of the project: To provide quality engineering and efficient design.

Outcomes of the project: Various cost effective methods were analysed and the best alternative was selected depending on the client's interest.

Major Learning Outcomes: The internship gives hands on experience on live projects which in turn boosts confidence and creates an awareness of the various problems faced during execution.

Brief Description of working environment, expectations from the company: Very helpful environment which appreciates critical thinking and considers alternative solutions to problems. The company expects creativity and sound technical knowledge.

PS-II Station: Worley Parsons India, Mumbai

Student

Name: Dhaval Bhatt (2013A8PS409G)

Student Write-up

Short Summary of work done during PS-II: Creation of an Application-level program using C#/.Net and Machine Learning. The output being an automation Bot to recognise the input query and reply with relevant output.

Tools used (Development tools - H/w, S/w): C#/.Net - Visual Studio, MS Azure ML, MS Cognitive Services.

Objectives of the project: To create a Proof-of-Concept Bot to reduce repetitive error tasks and solution tickets.

Outcomes of the project: Bot in Beta-Testing with added functionalities and integrations, hosted on the server: aimed at packaging the bot as a WP Product as an automation solution.

Major Learning Outcomes: Programming with multiple language interfaces, Natural Language Processing (ML), Product Releases in Industrial Applications.

Brief Description of working environment, expectations from the company: The team for which I worked is about a year old now (in June, 2017) and the working environment is not much different from a start-up. But the team being a part of an MNC gives a certain professional cover of an industrial working environment to that of a start-up. The People are pretty cool and they expect a full-fledged product/outcome, and the work is deadline oriented instead of a daily-task-completion, which gives the flexibility and freedom to grow. They value innovations and look for logical additions to the already existent or upcoming solutions.

Name: Antriksh Singh (2015H144036P)

Student Write-up

Short Summary of work done during PS-II: My internship dealt with the application of Machine Learning. The study involves building a predictive model, a mathematical model by using application of regression and neural networks to predict engineering man hours involved in an EPC Project.

Apart from this to fulfil the business requirements of the company I actively participated in creating and automating the dashboards to track the key performance of engineering team using Microsoft Power BI. The internship helped in exploring comprehensive knowledge in the field of machine learning by developing my skills in various analytical tools such as R programming, R Analytics flow, and Azure ML.

Tools used (Development tools - H/w, S/w): R Analytics Flow, R Studio, Visual Studio, R and Microsoft Azureand Microsoft Power BI.

Objectives of the project: Predictive Modeling.

Outcomes of the project: Engineering Man hours Prediction.

Major Learning Outcomes: Application of Machine learning in data analysis using R programming and Microsoft Azure.

Brief Description of working environment, expectations from the company: In Worleyprasons I was part of Global Delivery center (GDC) system team. GDC System provides the support to Engineering and project system. To start with I would like to share my work environment experience. The communication is open and transparent. A sense of unity is evoked when you are working in a team.

To develop interpersonal skills various events such as learn and learn are organized quite often.

Domain: Eco & Finance & Management

PS-II Station: AlphaMD, Mumbai

Student

Name: Swapnil Popat Chandwade (2015H146212P)

Student Write-up

Short Summary of work done during PS-II: My PS Project was to compile the drug regulatory and the pharmacovigilance requirements of several regulated and semi-regulated markets across the globe. Along with it, I was also associated with several short-term projects, including but not limited to, primary and secondary research, drafting RFPs, coordinating with current and prospective partners, developing wireframe content for the company's new website, and writing weekly blogs and newsletters.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Microsoft Word, and Google Chrome.

Objectives of the project: To develop a simple document containing the drug regulatory and pharmacovigilance requirements of several important markets for ready reference.

Outcomes of the project: A simple document containing the drug regulatory and pharmacovigilance requirements of several important markets for ready reference.

Major Learning Outcomes: Knowledge of various functions of MS Excel.

Brief Description of working environment, expectations from the company: Alpha MD as a PS Station has indeed been a great learning experience. The company offers complete exposure to both of its divisions- Life Sciences and Analytics. The company takes pride to have highly experienced and skilled professionals on board. The team welcomes you with a week of induction program, in which you interact with the people heading each department, viz. Analytics, Regulatory Affairs, Scientific Writing, Biostatistics, Pharmacovigilance, and Business Development. You are then assigned a few tasks in these verticals, so that you get a hint of the work done in those fields, and then you can choose a particular team to work with, depending upon your interests. My project was to carry out a secondary research and thereby compile a detailed Excel sheet, containing the requirements of the drug regulatory

authorities for obtaining the marketing approval, and the post marketing surveillance or the pharmacovigilance reporting requirements. Alongside, I have had a chance to work on several other projects, which involved using Advanced Excel, some other primary and secondary research projects, drafting RFPs, coordinating with current and prospective partners, developing a wireframe content to completely overhaul the company's website, and writing weekly blogs and newsletters. Though Alpha MD was founded just 3 years ago, I see it as a microcosm of a complete corporate firm. The team always encourages new ideas, supports your passion, and always ready to take up new initiatives. That said, it is solely up to you to make the most out of these 5 months.

Name: Akanksha Kudalkar (2015H146210P)

Student Write-up

Short Summary of work done during PS-II: These five and a half months of internship at Alpha MD, promised me a plethora of healthcare domains to work on. The first project assigned to me was the 'Designing and development of Pharmaceutical Regulatory Matrix for South-east Asian and North American countries'. The main objective of this project was to collect all the information pertaining to the Regulatory applications requirements, Pharmacovigilance requirements and the various application forms and documents to be submitted to various regulatory agencies. The second project assigned was the 'Preparation of an internal white paper publication on the treatment cycle of Hepatitis C virus and the impact of newer agents in India'. This project involved designing questionnaire for gastroenterologists, interviewing them, collection, compilation and analysis of the data obtained. Apart from these two major projects, I have prepared the weekly newsletters that cover the major world pharma news that include - Industry updates, Treatments under development and Regulatory news. I have also worked on the wireframe design and developed content for the 'Life sciences' services of Alpha MD's newly launched website. Other assignments I have worked on include - 1)Preparation of flowchart on the 'Treatment algorithm for Cilastatin/Imipenem combination' which was a part of a medical writing assignment 2)Questionnaire designing 3)Conducting surveys 4)Literature search that included searching for various parameters affecting the aseptic processing in the manufacturing of areosols 5)Searching for disease overview, new treatments available and competitive landscape etc. 6)Weekly blogs about the trending topics in the pharma industry.

Objectives of the project: Project 1 - Designing and development of Pharmaceutical Regulatory Matrix for South-east Asian and North American countries. The main objective of this project was to collect all the information pertaining to the Regulatory applications and Pharmacovigilance requirements, the various application forms and documents to be submitted to various regulatory agencies.Project 2 - Preparation of an internal white paper publication on the treatment cycle of Hepatitis C virus and the impact of newer agents in India. This project involved designing questionnaire for gastroenterologists, interviewing them, collection, compilation and analysis of the data obtained.

Outcomes of the project: 1. Completion of Regulatory matrix ensuring ease of access to all documents required for filing of any regulatory application 2. Publication of internal white paper.

Major Learning Outcomes: Working at Alpha MD widened my Regulatory affairs knowledge base and made me familiar with the global trends in the industry. I was exposed to the basics of secondary research. I had a firsthand experience of the industry. It made me confident of conducting interviews and interacting with doctors, designing questionnaires, preparing power point presentations and working on excel.

Brief Description of working environment, expectations from the company: At Alpha MD, I have had the opportunity to work with highly qualified professionals such as Medical Doctors, Public Health experts, PhDs, Health System experts, Marketing & Finance consultants, Economists, Statisticians, and experts with a masters and bachelors in Pharmacy. Being a start-up company, I could directly interact with senior professionals belonging to various fields. Alpha MD offers a perfect balance of a fun filled and yet at the same time professional environment. The staff has been extremely friendly, helpful and approachable. They have very flexible in their approach. Before being assigned a project each of my colleagues belonging to different departments at Alpha MD gave me a detailed overview of the type of work they were doing and the projects they were handling. I was allowed to pursue a project in the field that interested me and could simultaneously assist them in other projects. The seniors are readily available to solve our doubts and guide us through our projects. In addition to that, they provided me the necessary constructive criticism which helped me to improve my skills and work on my weaknesses. Most importantly, working at alpha MD has taught me work ethics and integrity. Overall, it has been a wonderful experience working for Alpha MD and I would highly recommend it to a pharmacy intern or a student as you can explore all aspects of pharmacy and healthcare related domains and choose to work in a field of your liking such as Analytics or Life sciences.

PS-II Station: Altimetrik India Pvt. Ltd, Bangalore

Student

Name: Mayank Madhur (2015H149222P)

Student Write-up

Short Summary of work done during PS-II: Analysis of different companies like Ratio analysis, financial analysis, SWOT .Technology Trends of different sector like automobile fin tech banking etc.

Tools used (Development tools - H/w, S/w): excel, ms power point, ms excel, visio.

Objectives of the project: IoT opportunity challenges and future strategy.

Outcomes of the project: Lots of opportunities in coming future but only with correct strategy those opportunities can be fully used.

Major Learning Outcomes: IoT has lot of opportunities in future but company needs to shape strategy properly.

Brief Description of working environment, expectations from the company: Excellent work environment and empowerment. Highly motivated and talented teams. Great leadership sharply focused on costumer delight, employee satisfaction and innovation.Investing significantly on talent enrichment and transformation, emerging technologies, innovative solutions and platforms.

PS-II Station: American Express India, Bangalore

Student

Name: Anurag Prakash (2013A7PS061P)

Student Write-up

Short Summary of work done during PS-II: My project was in helping the company in leveraging a widely used open source gradient boosting machine library. I, with my team had to adapt it to match company compliance requirements and understand its working.

Tools used (Development tools - H/w, S/w): C++ latest constructs, simple concepts of data streaming and distributed programming.

Objectives of the project: My project was in helping the company in leveraging a widely used open source gradient boosting machine library.

Outcomes of the project: Project was successful and it is expected that models created by all employees working in Rim-coe at American express will make use of this gym library**.**

Major Learning Outcomes: Various machine learning concepts.

Brief Description of working environment, expectations from the company: The environment is ok. There is no requirement for overwork and people are helpful in general. There will be lots of day as where we have to stay till late in office to sync up with corresponding US employees.

PS-II Station: American Express India, Gurgaon

Mentor

Name: Mr. Purna

Designation: Director Risk Management

Comments: Students have successfully migrated our services written in SAS to python. It has significantly improved response time for analyzing big data. Students are punctual, disciplined and has shown accountability to their work. We look forward to have interns who have knowledge of Machine learning, excellent programming and communication skills.

Faculty

Name: Ashish Narang

Comments: Expectations from industry:

American Express also known as Amex is an American multinational financial services corporation headquartered in New York. The organization is best known for its credit card, charge card, and traveller's cheque businesses. Interns are expected to work on technologies like R, SAS, Python, Java, Angular JS and Node JS etc. Organizations prefer students who have done courses like Artificial Intelligence and Machine Learning. In addition to it, they prefer interns who can take ownership of the task, eager to learn, open to work on different technologies and have excellent communication skills.

Student

Name: Gunjan Kumar Singh (2012B5A7521P)

Student Write-up

Short Summary of work done during PS-II: My work involved converting existing SAS code of various processes compatible for distributed big data environment.

Tools used (Development tools - H/w, S/w): S/w: Python, Spark, SAS, RevR, WinSCP and UNIX.

Objectives of the project: Seamless migration of SAS processes to Big Data environment.

Outcomes of the project: Pyspark codes of existing SAS processes.

Major Learning Outcomes: Spark, Introduction to Big Data.

Brief Description of working environment, expectations from the company: The company work culture is very chilled. The people are friendly. Workload is not high once you get a hang of the stuff you are working with.

Name: Kapil Singhal (2013A7PS038P)

Student Write-up

Short Summary of work done during PS-II: As the world is becoming more and more digital Big Data is becoming subsequently more prevalent. So American Express utilizes its “closed loop” data to correctly predict the defaulting probability to reduce credit loss. Currently the entire process executes on SAS (Statistical Analysis System) utilizing Teradata. AmEx uses Hadoop File System to store such a large amount of data. SAS is unable to utilize this. For its working the data has to be exported and converted

into Relational Database. To reduce this overhead our team is trying to leverage other big data processing options available in market such as Apache Spark and RevR.

Tools used (Development tools - H/w, S/w): S/w: Pyspark, Hive, and SAS.

Objectives of the project: Seamless migration of existing processes to Big Data environment.

Outcomes of the project: Processes migrated to Big Data environment and automated.

Major Learning Outcomes: Spark architecture, Hive.

Brief Description of working environment, expectations from the company: American express come at position 2 after google in great places to work at and a company which takes care of its employees.Working in this company would give you great experience and learning. As the company is shifting its base to Big Data more projects will be floated in this area. Also work life balance is good, you will not be forced to work overtime or work on weekends.

PS-II Station: Credit Suisse, Mumbai

Student

Name: Siddhant Ranjan (2013A4PS274P)

Student Write-up

Short Summary of work done during PS-II: I worked in the Model Risk Management department, specifically the Governance team. The work primarily involved the risk and control assessments (RCA) of medium risk models. CS follows the FRB regulations and we had to incorporate that as well in the models.

Tools used (Development tools - H/w, S/w): MS Excel, CS internal tools.

Objectives of the project: 1. Medium risk review of all active models used by CS 2.Inventory management and migration to new software, TR Connect.

Outcomes of the project: 1.The new model repository is live and working perfectly.2. The medium risk review of many models has been completed.

Major Learning Outcomes: 1. corporate communication and soft skills 2. Regulatory guidance used by Private Banking sector. 3. Importance of effective inventory management.

Brief Description of working environment, expectations from the company: The work environment was highly conducive due to the lack of micro management and flexible timings. Managers are extremely friendly and approachable. All employees work at their own pace hence learning is more effective. Also, CS conducts knowledge sharing sessions and intern talks where speakers present relevant topics.

Name: Kumar Satyavir (2015H149256P)

Student Write-up

Short Summary of work done during PS-II: Specific Wrong Way Risk Identification for Trades and Enhancements in Current Methodology for Identification of Trade Correlation.

Tools used (Development tools - H/w, S/w): MS Excel, VBA, SQL and Bloomberg Terminal.

Objectives of the project: Understand Wrong Way Risk regulatory definitionUnderstand current methodology for SWWR- Trade CorrelationUse qualitative techniques to enhance present methodology.

Outcomes of the project: Attained success in creating a tool that could simplify the present methodology by identifying wrong way risk trades qualitatively within a matter of minutes.

Major Learning Outcomes: Before you go to any Finance PS station, you must be having idea of coding through VBA, R or Python. That would help you learn and carry out project more effectively.

Brief Description of working environment, expectations from the company: At Credit Suisse, Mumbai my personal experience within my department was that interns are not given that much support which they should be. So, they have to carry out or learn most of the things on their own. The expectations from an intern are quite high from the very beginning. It, at times, acts as a blessing in disguise as you find a way out to learn everything on your own. Additionally, I felt interns should be allotted such departments where your manager has some spare time to train or guide you else you might feel alienated. The overall working environment is good and if you are ready to grind yourself, you would come out as an improved professional at the end of your PS no matter you get the PPO or not which in turn is dependent on a lot of factors, truly beyond your control and independent of how well you have carried out your project.

Name: Smriti (2015H149250P)

Student Write-up

Short Summary of work done during PS-II: I worked within credit risk department in CS. I did two projects during my internship apart from business as usual works. I have worked on python and developed a validation of parameters which is used to calculate risk charge. For this I had to have an understanding of what the team does and how this risk charge is calculated. Using python, which I learnt here, I developed a code which is used to validate the parameters and modeling choice using minimum human intervention. Secondly, I worked on default data sourcing, analyzing, validating for errors and finally submitting it to global credit committee. Apart from my projects, I worked on R to improve their existing codes for process automation. I also suggested ways in which one of their big file can be material to senior management.

Tools used (Development tools - H/w, S/w): R, Python and VBA.

Objectives of the project: 1. Understanding and validation of LGD parameters (LGD volatility and LGD correlation) which enters IRC model in python. 2. Understanding, sourcing and validation of errors of default data to be submitted to GCD.

Outcomes of the project: 1. I have developed whole set of codes in python which can be used to determine the modeling choice of LGD volatility and estimate for LGD correlation which is ultimately used to calculate incremental risk charge.2. I have prepared the default files with error checks to be submitted to GCD.

Major Learning Outcomes: Learnt R and Python Also I got to learn about the corporate culture.

Brief Description of working environment, expectations from the company: Although it was a learning experience for me but current scenario is difficult from an internship perspective in credit risk department. Many of my fellow interns have not been assigned tasks or projects. The management is quite aloof and unappreciative which is demoralising for the interns. The job opportunity or PPO does not only depend on the quality of your work. Interns are cheap labours and don't get appreciated. Managers are not quite helpful. This may be just a department issue and as per observation, employees of credit analytics were also unhappy with the management. Less chances of getting conversion.

Name: Sukriti Kumar (2012C7A2839P)

Student Write-up

Short Summary of work done during PS-II: Calculating the scenario RWA of the credit Suisse portfolio on a given close of business days under different global scenarios. The project included defining the scenarios, execution of the scenarios, sense checking of the scenarios and calculation of the RWA.

Tools used (Development tools - H/w, S/w): SQL, MS Excel, MS PowerPoint and MS Doc.

Objectives of the project: Calculation of scenario RWA for the credit Suisse portfolio.

Outcomes of the project: More than 15 scenarios were implemented during the PS.

Major Learning Outcomes: EAD calculation, the details of how a scenario is defined and then implementwd and also the various methodologies which are in use at credit Suisse for EAD.

Brief Description of working environment, expectations from the company: The working environment is very conducive to learning. People are very approachable and happy to teach in case we show the drive to learn new things.

Name: Bhaskar (2013A4PS031H)

Student Write-up

Short Summary of work done during PS-II: I had to help the team with their daily tasks. Additional to this, I worked on my PS II Project of process automation of FINRA calibrations. I had to automate the calculation of tables used as a fallback in their exposure calculation model for ICE cleared CDS trades. ICE is a central counterparty and Credit Suisse is a clearing house for ICE (Intercontinental Exchange). Along with my PS II project, I also helped in generating exposure profiles for various test cases for the fallback model that is newly being developed.

Tools used (Development tools - H/w, S/w): Excel, R.

Objectives of the project: Process automation of FINRA calibrations, Calibrations for March update ofthe tables.

Outcomes of the project: Reduced the time taken to calibrate the tables from one week to one day.

Major Learning Outcomes: I had to learn various aspects of Credit Risk Modeling, especially on the EAD side. I had developed technical skills like R, Excel and also developed deep knowledge on VaR calculations.

Brief Description of working environment, expectations from the company: The working environment is very good and the work culture is heavily dependent on the team that you work in. The managers and teammates are very friendly and are ready to help.

Name: Gopal Bhatt (2012B3A4606P)

Student Write-up

Short Summary of work done during PS-II: My work comprised of two components; the first being monitoring risk changes in the portfolio by the generation of various daily and weekly reports. This was part of the BAU (Business as Usual) of the team. The second aspect was the completing the assigned project work. This was aimed at enhancing my knowledge of derivatives as well as builds a working knowledge of systems and softwares in Credit Suisse.

Tools used (Development tools - H/w, S/w): SQL, MS Excel.

Objectives of the project: Building a tool to calculate notional for all products in the equity derivative portfolio Determining Vega and correlation hedging strategies for major structured products in portfolio.

Outcomes of the project: Completion of the tool and and using it for weekly notional report generation; Creating a deep dive presentation on hedging trigger redeemables.

Major Learning Outcomes: Learning the major concepts of risk management like VaR and Scenario Analysis; Building knowledge of diverse structured products; Good working knowledge of MS Excel and SQL.

Brief Description of working environment, expectations from the company: Positive environment in the team with a lot to gain mutually due to everybody's work being aligned to different regions.

Name: Ayush Gupta (2013A5PS584P)

Student Write-up

Short Summary of work done during PS-II: As a part of my Practice School II program, I interned at the Prime Services Department of Credit Suisse. The transition from academic learning to industrial experience was quite smooth as we got plenty of time and resources to polish our skills and understand the project well. My major work included coming up with a more sophisticated model to analyse stocks becoming Hard to Borrow on street and experiencing a Short Squeeze. Apart from this I also got opportunity to work on various global indices from time to time like CAC 40, FTSE 350, STOXX 600 to analyse the past historical trends and generating analysis for idea generation on developing strategies/pitching material for the trading desk in London.The projects were very fascinating and challenging throughout. Apart from this I had also assisted the team in day to day deliverables by running various kinds of analysis on market and firm level data to be used for Client/Desk purpose ultimately.

Tools used (Development tools - H/w, S/w): Excel, VBA.

Objectives of the project: 1)To define a model to study HTB stocks and predict short squeeze 2)To study life of a Merger/Acquisition with a focus on its Price, Fees and Short Interest.

Outcomes of the project: The project on HTB stocks is in its testing phase with we trying to analyse which of our proposed methodology has the maximum hit rate with the live market data. The project on Mergers & Acquisitions ultimately could not be concluded with any desired, generalized trend.

Major Learning Outcomes: I would say that the experience has been enriching and rewarding on professional, intellectual and personal fronts. I got a firsthand experience of the prime brokerage business. I developed great proficiency over financial analysis, market and index tracking, great command over tools like Excel and VBA.

Brief Description of working environment, expectations from the company: The idea revolves around working with front office traders in London and New York who are very encouraging and promoted me to work on my ideas. The company expects you to have sound academic record, hunger to learn and good communication skills. Interest and knowledge of quantitative finance is a plus.

Name: Asha Thomas (2015H149254P)

Student Write-up

Short Summary of work done during PS-II: I was part Governance and Reporting team of Global Market Controls Department. The team produces inputs for the Control Committee Meetings, Business Risk Control Meetings and Financial Crime Compliance etc. As part of my internship I was able to liase with various businesses of Global Markets to get Metric breaches commentary and investigate upon the same. My major work was on preparation of financial crime compliance (FCC) packs for different business and entities of Credit Suisse. The raw data obtained from different departments has to be processed and filtered and then each business division pack is prepared in PowerPoint. This is used by FCC and is also discussed in corresponding business risk meetings. A high level view is also used in GM Controls Committee meetings. This is used in deciding strategies related to client off boarding and future client onboard. Also did little BAU automation so as to improve efficiency and accuracy.

Tools used (Development tools - H/w, S/w): Extensive use of PowerPoint, Excel and VBA for automation.

Objectives of the project: To identify the risk profiling of clients of various business divisions and see if it breaches the Risk Appetite Threshold values.Looked into new clients, high risk clients, politically exposed clients etc.

Outcomes of the project: To comply with Financial Control Authority guidelines so as to reduce any possible Financial Crime as per Anti money laundering programme.This helped in preparing strategies for client off boarding and on boarding.

Major Learning Outcomes: Insights on Operational Metrics used by an investment bank (Key Risk Indicators and Key Control Indicators), Risk Control Self Assessment Profiling, Business Risk and Financial Crime.

Brief Description of working environment, expectations from the company: Good Working environment with working hours from 9.30- 7 pm. team members and mangers are helpful and welcomes all your queries.

Name: Parth Gupta (2013ABPS546P)

Student Write-up

Short Summary of work done during PS-II: My project was based on automation of in-house tools used by the trade analysis team. I worked with VBA SQL and Excel worksheets for the same. My main internship project though was based on understanding risk exposure and how it is calculated in the credit Suisse systems. I did this for plain vanilla derivatives. I also understood the methodology in detail for two risk exposure calculators. There were also some ad hoc assignments which were given to me by my line manager and I worked on them from time to time. There were also some ad hoc assignments which were given to me by my line manager and I worked on them from time to time.

Tools used (Development tools - H/w, S/w): Microsoft Excel, SQL DBX.

Objectives of the project: To understand the risk calculation methodology for derivatives.

Outcomes of the project: I was able to update the tools used by my team as per the latest BASEL 3 replacement cost guidelines. I also recommended solutions to shortcomings seen in the Credit Suisse

systems. I also coordinated with the Poland IT department to fulfil certain requirements of products for our team.

Major Learning Outcomes: VBA, SQL. Understanding of Risk.

Brief Description of working environment, expectations from the company: The work environment is quite formal. The work provided by the team is of very good quality moreover it also provides the opportunity to interact directly with the front office traders. The colleagues are very helpful and insightful. The working environment is also not very stressful and has really good work hours.

Name: Roshni Chhabra (2013A1PS661P)

Student Write-up

Short Summary of work done during PS-II: My team is Controls attestation and basically attests and checks what other teams in GM Controls do. The work revolves around Review of Global Markets Common Controls Inventory and business specific. The whole team follows approach of walkthrough with control owners for front to back understanding of the controls. Also Design and Operating Effectiveness of the Controls and reporting to senior management is reported where different testing is done after performing ICRA. The ICRA helps in deciding frequency, testing samples in control and time period for testing. It also tells us whether to follow Tier 1 or Tier 2.

Tools used (Development tools - H/w, S/w): Excel, PowerPoint, Controls Portal, and Word.

Objectives of the project: My daily project activities involve-1. Review and Understanding of Common Controls Inventory Themes2. Front to back understanding of allocated themes by reviewing procedure documents and performing walkthroughs with control owners3. Identifying and reviewing CS policies related to the allocated themes to identify additional controls (if any) 4.Performing DEA (Design Effectiveness Assessment) for the allocated control themes to conclude whether the design is aligned to meet stated control objectivesOutcomes of the project: Performing OEA (Operating Effectiveness Assessment) to confirm operating effectiveness.Reporting Controls Assessment to Senior Management with summary findings and recommendations.

Major Learning Outcomes: During team meetings, I was asked to give team sessions on topics like HOLT, Dark Pool etc for overall benefit of the team and self learning of new changes in banking world. This helped me learn new banking concepts. Also I developed great understanding of controls both common and business specific. And performance of effectiveness assessment gave me practical understanding of how important, a control is.

Brief Description of working environment, expectations from the company: Credit Suisse has very friendly environment. They treat BITS interns as regular employees. You can escalate the issues very easily directly to senior management if you face any issue. Also they organize fun activities in the company to keep motivating people. You can anytime reach to other departments too in case you need any help.They all very friendly. Work is great here. They also ask you for recommendations and feedback to improve the work.

Name: Mayur Ashia (2012B3A3554H)

Student Write-up

Short Summary of work done during PS-II: Primarily involved in report approval and estimation of Market risk by sensitivity and VaR analysis and estimation. The process involves the extensive use of in-house softwares.

Major Learning Outcomes: The exposure to industry, learning and fulfilling their requirements gives us confidence about our knowledge, and such a learning process is very motivating to keep learning more.

Brief Description of working environment, expectations from the company: Working environment is good. Great support and guidance of employees at Credit Suisse, the eagerness and friendliness that these people have shared is invaluable.

Name: Avinash Dontamsetty (2012B3AA627H)

Student Write-up

Short Summary of work done during PS-II: The risk management team of the prime services division mainly deals with the risk analysis of the trades done through the Prime Brokerage team which mainly includes the hedge fund portfolios. The operations of the risk management team are mainly divided into three parts which are Processes (morning and evening), Documentation and Advisory. Apart from this the report also deals with implementation of the Bloomberg fundamental factor model and the trend analysis of each of the ten quant factors.

Tools used (Development tools - H/w, S/w): Microsoft Access, Excel, SQL, Tableau, Bloomberg, Reuters.

Objectives of the project: To understand the functioning of the risk management team.

Outcomes of the project: Bloomberg fundamental factor model in excel along with improvements in daily reports in terms of the quality.

Major Learning Outcomes: Tableau, VBA and a better understanding of financial instruments and risk measures (stresses, scenarios).

Details of papers/patents: Bloomberg Fundamental Factor Model.

Brief Description of working environment, expectations from the company: The working environment wasn't very supportive as there were a lot of corporate politics involved but if one focuses on the work and doesn't let the things get to his head it should work fine. The work isn't rocket-science, it's a lot of basic work but then there is a lot of learning which one can get from here not only in terms of concepts but also in terms of the corporate culture etc.

Name: S Priyadarshini (2013B3TS959H)

Student Write-up

Short Summary of work done during PS-II: Automation of processes on Excel and Tableau, involved in Client Pricing and analytics.

Tools used (Development tools - H/w, S/w): Tableau, Excel and R.

Objectives of the project: To understand the pricing of various clients and the different aspects of a firm's business and the respective profit and loss calculations.

Outcomes of the project: Complete understanding of the negotiations with clients, how firms charge their clients and the various metrics used to analyse a firm's own business.

Major Learning Outcomes: Skill development in Tableau and excel, understanding of the business.

Brief Description of working environment, expectations from the company: A very fun working environment, helpful colleagues, get to learn a lot in the firm.

PS-II Station: Credit Suisse, Pune

Student

Name: Aditya Bhalchandra (2015H149229P)

Student Write-up

Short Summary of work done during PS-II: Managed end to end process of profit and loss validation and reconciliation for derivatives trading activities in the Australian, Japanese & Hong Kong market generating 40 man-hours per week capacity for the team to get trained for the task being deployed from Hong Kong. Liaised with traders in Australia and Japan and financial accounting team in Hong Kong for the reporting of daily trade's profit/loss and any unusual activities to the regulatory authorities in respective markets.

Tools used (Development tools - H/w, S/w): Managed end to end process of profit and loss validation and reconciliation for derivatives trading activities in the Australian, Japanese & Hong Kong market generating 40 man-hours per week capacity for the team to get trained for the task being deployed from Hong Kong. Liaised with traders in Australia and Japan and financial accounting team in Hong Kong for the reporting of daily trades' profit/loss and any unusual activities to the regulatory authorities in respective markets.

Objectives of the project: Microsoft Excel.

Outcomes of the project: Stabilization of Convertible Business and capacity generation for DC-BC merger.

Major Learning Outcomes: Generated 5 man-hours/day of capacity for the team to get trained for the task being deployed from Hong Kong.

Details of papers/patents: 1. Excel 2. Accounting Principles 3.Team Skills4. People Skills.

Brief Description of working environment, expectations from the company: 1. Work environment: Cooperative, special attention is given to interns, highly demanding **2**. Expectations: Microsoft Excel, Finance product knowledge, Clarity of accounting principles, Flexibility, Openness to learn, Intellectual curiosity.

Name: Deependra Shastri (2015H149260P)

Student Write-up

Short Summary of work done during PS-II: I was working as a product controller in CS. Product Control involves monitoring of trades in the portfolios and act as a primary control function. Secondly, Front office – Back office analysis, including verification of the trades booked by the front office and executed by the back office as they are in line**.**

Objectives of the project: To create efficiency through standardization and consolidation of processes for Cash Equities.

Outcomes of the project: 1. Saved 5 hours as 18 hours process reduced to 13 hours. 2. Better control over processes has been achieved. 3. Standard and Uniform output to stakeholders.

Major Learning Outcomes: 1. Learned to handle pressure, 2. Multitasking. 3. Value chain & roles of partners and stakeholders.

Brief Description of working environment, expectations from the company: The culture was encouraging with great focus on constant learning.

Name: Sameer Rastogi (2015H149267P)

Student Write-up

Short Summary of work done during PS-II: I worked under book closure team wherein my work was to perform the checks and confirm if a book is good for closure.

Objectives of the project: To fortify the control checks of book closure team.

Outcomes of the project: Efficient book closure process.

Major Learning Outcomes: Learnt about various transaction systems and work flow.

Brief Description of working environment, expectations from the company: Good working environment and developed amicable relationships with the team. Everyone is of helping nature.

Name: Rahul Tomar (2015H149249P)

Student Write-up

Short Summary of work done during PS-II: Handling the daily P&L numbers of various Credit Suisse trading entities and ensuring their correctness and completeness.

Tools used (Development tools - H/w, S/w): Mostly MS Excel and proprietary tools of Credit Suisse.

Objectives of the project: Simplifying the P&L break investigation and reconciliation process for my team.

Outcomes of the project: Helped my team in reducing the complexity and man hours spent in PnL break investigation and reconciliation.

Major Learning Outcomes: Macros, Ledger creation and updating, fixed income products.

Brief Description of working environment, expectations from the company: Working environment is very friendly, trainer and other team members are very helpful. Our VP and AVP were very approachable and provided sound guidance. Expectations from interns are very high so be prepared.

Name: Kishore (2013A1PS594P)

Student Write-up

Short Summary of work done during PS-II: Valuation Controller - Price testing, Risk based testing.Some automation.

Tools used (Development tools - H/w, S/w): Excel Advanced, VBA, and ACCESS.

Objectives of the project: Mostly Automation and Improvements.

Outcomes of the project: Learned different things and good understanding of Excel VBA.

Major Learning Outcomes: Finance products and their testing.

Brief Description of working environment, expectations from the company: Good company and very cooperate. Company needs people who are good with adaption to changes, willing to work hard.

Name: Parth Gupta (2013A4PS369H)

Student Write-up

Short Summary of work done during PS-II: The main role of a Line Controller in PC division is to report and validate the daily P&L and theprovide reasonable justification for mismatch/breaks which can have an impact on the daily generated P&L. The product controller must ensure that the numbers entering the final systems are in tandem with each other. The projects undertaken have helped me mature as a product controller and also helped in comprehension of the workings. Apart from working on daily Business as usual (BAU's), the project given helped me realized my potential and also helped me in managing things better. This helped me with abiding the deadlines on a daily basis, which made me better at managing things with precision, also making sure that error rate is minimized.

Tools used (Development tools - H/w, S/w): JAZZ, Jane RDx, and Microsoft Excel.

Objectives of the project: To consolidate the file into one big source, to minimize the time spent on the Account Ownership Reconciliation file.

Outcomes of the project: The consolidated file acted as a one big access stop. Also I was able to add additional check in the file, so that my supervisor could have more confidence, while reviewing the data.

Major Learning Outcomes: Learnt excel both basic (formulas) and advance (VBA-Macros). Real time, effective communication skills.

Brief Description of working environment, expectations from the company: This was my first hand experience and exposure to corporate world. What I found about the working culture of the company, from the experiences of other employees, my knowledge is limited to that only and to some extent also includes my own experience also. 5.5 months is a short tenure to decide. The culture is good. Employees are never shouted or reprimanded at. People are busy with their work, but if one needs any help, one needs to approach the individual and have enough patience to come back again when the individual gives the time slot. Don't expect the usual spoon-feeding done during all these years in the schools and

colleges. Employees are very independent and are expected to solve an issue on their own, sometimes even beginning from scratch. Initially it might send a cultural shock to the students, but over the time, one becomes habitual to it. There's a lot of work, which might also include sitting late in the night. Have patience and maintain good attitude. Be humble in tone while speaking to everyone, senior or junior.

Name: Amit Arora (2012B3A2577G)

Student Write-up

Short Summary of work done during PS-II: I worked in the Liquidity Reporting for the APAC region.

Tools used (Development tools - H/w, S/w): Axiom, Excel.

Objectives of the project: To Generate the LCR ratio and to ensure that the data is flowing correctly into the system.

Outcomes of the project: Monthly Report Generation.

Major Learning Outcomes: You get to know about the HQLA that is being recognized by the Country's government and various cash flows.

Brief Description of working environment, expectations from the company: Working environment is good. People respect each other and you are being encouraged to perform your best.

PS-II Station: DBOI (Deutsche Bank) - Operations, Mumbai

Student

Name: Ankur Baheti (2012B3A4472G)

Student Write-up

Short Summary of work done during PS-II:Credit Ratings a) I worked in Asia Pacific team which has a portfolio of corporate & banks (which DB has credit exposure to) from India, Australia, Japan, Singapore, Thailand, Vietnam, Japan, China, Hong Kong (largely). b) I wrote credit rating reports for few Indian corporate, many Vietnamese banks, & an Oil & Gas company from Australia. c) For writing these reports, I had to do intense research about the company, sector, & macroeconomics of the country in which these companies have their presence. d) A big part of these reports are dedicated to the analysis of the financial statements. e) The depth of these reports is lower than those covered by equity research analysts and these reports are written from the perspective of credit risk.

Tools used (Development tools - H/w, S/w): Bloomberg Terminal, Excel, & other proprietary softwares.

Objectives of the project: Credit Ratings for clients in Asia Pacific Region.

Outcomes of the project: Credit Rating Reports.

Major Learning Outcomes: Financial analysis from the perspective of credit risk.

Brief Description of working environment, expectations from the company: Working hours around 8-9 hours. Timing depends on your team.

Name: Shobhan Krishan Mishra (2012B3A8613H)

Student Write-up

Short Summary of work done during PS-II: Primarily related to credit ratings of counterparties.

Objectives of the project: 1. Understanding credit risk, 2. Understanding Company and evaluating financial statements.

Outcomes of the project: Credit risk management using various approaches.

Major Learning Outcomes: 1. Understanding credit risk, 2. Understanding Company and evaluating financial statements.

Brief Description of working environment, expectations from the company: Working environment is really good, people are supportive and helpful, great learning opportunity with proper mentorship.

Name: AKSHATRAI (2013A2PS498P)

Student Write-up

Short Summary of work done during PS-II: During my internship I was involved in the Business as usual activities like validating signing off of Value at Risk of the organisation, analysing the process/technical issues which affect the quality of risk and creating reports for the higher management.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: To do a Root cause analysis of the issues causing stale risk in the Equity Business and studying exceptions report in IRC business.

Outcomes of the project: 1. Helped in creating a KPI to track the quality of risk measurement in Equity business 2.Was responsible for clearing out exceptions in IRC non linear trade data.

Major Learning Outcomes: To understand the process of Market Risk measurement and various KPI to assess the the quality of risk.

Brief Description of working environment, expectations from the company: Working in Market Risk Control team in DBOI Mumbai one definitely learns a lot about the Risk management field. You get to interact with highly knowledgeable professionals with varying academic backgrounds, each excelling in their own field of work. Apart from it more importantly you get a flavour of the corporate life and learn a lot about organizational psychology. However the work here is more process oriented in nature and work related learning is not much.

PS-II Station: Ecom Express Pvt. Ltd., New Delhi

Student

Name: Syed Ariz Ali (2013A4PS677G)

Student Write-up

Short Summary of work done during PS-II: I worked in the Business Analytics division to analyze data in order to optimize operations. I was specifically involved in monitoring volumes on a daily basis and generating reports and alerts based on the same. I was also involved in a full state expansion project, customer exhibits, conducted a time and motion study on hub operations, and developed a decision making tool for manpower sanctions. We were also enrolled in an advanced R training workshop in the company.

Tools used (Development tools - H/w, S/w): Excel, VBA, SQL andR.

Objectives of the project: Data driven analysis on Volumes and Manpower. The objective was to automate the generation of reports on volume allocation and customer exhibits, and to make the process of manpower sanctions a more scientific one**.**

Outcomes of the project: Over allocation reports were generated via VBA automation daily, saving an hour's time daily. A decision making tool for manpower sanctions was developed which helped the company cut costs incurred due to excess manpower.

Major Learning Outcomes: Learned a lot about the Logistics Industry. Also learned VBA, Excel, SQL, and R through the course of this internship.

Brief Description of working environment, expectations from the company: The Company has a 6 day week, with no Saturdays off. The work environment is one of self-motivation, and the extent of how much you can get done or learn depends on you.The company expects you to have enthusiasm and to be prepared to learn the tools required for your projects as quickly as you can. The team is very helpful and you will usually work with a permanent employee in your project.

Name: Ayush Gupta (2013ABPS805P)

Student Write-up

Short Summary of work done during PS-II:The projects involved working for product categorization of e-commerce, Return To shipper (RTS) reduction and working on a white paper titled - "What is India shopping?". 1. Product Categorization: Develop an algorithm for e-commerce product categorization for the study of weight management, buying trends across India and strategic positioning of fulfillment center across India. This project uses the Machine Learning algorithms for text classification. 2. RTS reduction: The project flashes major issues/reasons which lead to the return of the shipments. It also includes the gamut analysis of the causes and suggests recommendation for its reduction/control. 3. Paper Work: This is an attempt to analyze the change in buying trend of the people across various segments due to demonetization. This includes tier wise analysis and item category wise analysis. This will be published as a white paper for the stakeholders of Ecom Express.

Tools used (Development tools - H/w, S/w): R, Python and MS Excel.

Objectives of the project: 1.The primary objective of the project is to categories all the products that Ecom Express ships. This categorization will help us to maintain a database in lowest level of category which will help in weight management purposes. Furthermore, this information shall enable us to plan our fulfillment centre stocking. 2. The objective is to highlight the reasons and faults by the employee due to which RTS happens and escalate the competent authorities to take required action.

Outcomes of the project: 1.The project will help us weight management which will directly help to increase the revenue of the company. 2. The project will help us to reduce the RTS significantly which will reduce losses incurred by the e-commerce websites. 3. It would help in establishing a better brand presence and outreach.

Major Learning Outcomes: Used MS Excel, Statistics Tools - R and programming tools- Python

Details of papers/patents: What is India shopping? Assessing impact of demonetization on e-commerce in India.

Brief Description of working environment, expectations from the company: The working environment is quite cordial. Although the work is not as specific as of an analytic consultancy, it bridges the essential

gap between supply chain and analytics.There is scope for team building and personality enhancement. However, if one is looking for non-core analytics & consultancy, they may look for other options.

PS-II Station: Edelweiss Financial Services, Mumbai

Student

Name: Prachi Chandak (2012B4AA587H)

Student Write-up

Short Summary of work done during PS-II: While domestic equity markets have been very volatile over the past decade, the market has not generally produced sizable positive returns. This creates serious challenges for equity asset managers seeking to generate attractive returns while relegating volatility to acceptable levels. So the aim is to maximize the profit with the help of multifactor analysis. This can be done by designing algorithms and strategies for various factors and optimizing the results. With the increasing size of data available, analyzing this data in Excel is tedious, so to optimize resources the Engine has to be designed in R.

Tools used (Development tools - H/w, S/w): R-Studio, Excel VBA.

Objectives of the project: To design a portfolio management platform in Studio.

Outcomes of the project: The platform was designed and tested and it was 6 times faster than the existing one.

Major Learning Outcomes: R, Finance.

Brief Description of working environment, expectations from the company: The work culture and working environment is friendly and no strict rules.The working hours are flexible. The only expectation is that student should do the work as expected in his/her own way without any other compliance.

Name: Yash Verma (2013A7PS023G)

Student Write-up

Short Summary of work done during PS-II: Helped in making market neutral strategies. Portfolio optimization using different optimizers. Made directional trading strategies.

Tools used (Development tools - H/w, S/w): R programming, Bloomberg.

Objectives of the project: Portfolio Optimization.Directional Trading Strategies.

Outcomes of the project: Completed both assignments.

Major Learning Outcomes: Quant Trading.

Brief Description of working environment, expectations from the company: Great work. PPO chance depends on which manager you get. All in all if you want to learn quant, this is the best company.

PS-II Station: Genpact, Gurgaon

Student

Name: Ankur Misra (2015H149284P)

Student Write-up

Short Summary of work done during PS-II: The work here at Genpact, Gurgaon has been diverse. I was privileged to work for two different teams i.e. for Project Jason and second corporate finance team. The initial project allocated to me was to "Study the impact of Brexit on UK as well as global economy". Project Jason majorly serves foreign bankers and consultants, especially in Europe from various verticals like Foreign investments group, Infrastructure, telecom etc. It provides back-end support by secondary research. The consultant client usually pitches for Merger and Acquisition (M&A) among smaller "target" firms, the facilitation client is usually an investment bank which works on behalf of client. M&A is being significantly impacted by the political decision of Britain exit from European Union. Macroeconomic factors which play an important role in decision making vary from region to region for a given company in its domain of operation. Hence, the internal financial health for a "potential" acquisition case is not merely judged on financial ratios such as EBIT/EBITDA, debt/equity positions but also synergy and macroeconomic analysis in a company. Trading and transaction comp analysis as well as parametric health is estimated with the help of "football field" analysis to potential M&A target. Secondly, I had the privilege to work for finance team in order to work out certain revenue related process bottlenecks, where Genpact suffered from revenue leakage due to either incorrect "revenue clocking" or non-complaint process behavior of project managers. Hence, I was given the responsibility to work on a dash-board at particular data points where revenue and sales specifics were not flowing properly. I was able to work alongside senior management people to work-out this problem. Since, the issue is multi-faceted and complex work is still in progress. In core sense it can be said that it is related to project segmentation and revenue aggregation.

Tools used (Development tools - H/w, S/w): Tools such as excel formula, Factset, mergermarket, orbis along with reports from secondary research.

Objectives of the project: The objective of the Brexit project was to conclude whether UK exit from EU would be macro-economically sound for financial institutions and global economy by analyzing economic performance metrics.

Outcomes of the project: It is not a good decision of UK to quit from EU in long term based on common market ground.

Major Learning Outcomes: Helped to learn a lot about area of operation of M&A clients for example investment bank. From back-end support to revenue management within a companyFinancial planning analysis helping in knowing legal intricacies of financial revenue clocking and resource management.

Details of papers/patents: No, since it is corporate client work.

Brief Description of working environment, expectations from the company: Working environment was cordial and professional as expected in any given setting for a multi-national company. Genpact should work more on devising a proper induction module for new interns, especially for undergraduates and graduates, because it is highly unlikely to continue without structured process in place. Secondly, stipend is very less in compared to work that is put in. At least 25K should be emoluments, considering the cost of living in a metropolitan city. Thirdly, it depends on individuals how much or how less they can absorb.

Name: Parul Singh (2015H149288P)

Student Write-up

Short Summary of work done during PS-II: Dcf valuation and customer risk assessment.

Tools used (Development tools - H/w, S/w): Excel PowerPoin.t

Objectives of the project: To get the share price of MCD through DCF valuation.

Outcomes of the project: Strike price of share.

Major Learning Outcomes: DCF valuation technique.

Brief Description of working environment, expectations from the company: Great team. The seniors are very Cooperative.

Name: Prateek Chaturvedi (2015H149299P)

Student Write-up

Short Summary of work done during PS-II: The work here in Genpact Gurgaon was related to investment deal advisory solution consisting of both quantitative analysis and qualitative analysis covering whole of deal cycle.

Tools used (Development tools - H/w, S/w): Ms Excel, PowerPoint, mergermarket, Factset.

Objectives of the project: To help in creating pitch book of a company and assist in deal advisory solution.

Outcomes of the project: Successful deal advisory solution, Analysis of deals done.

Major Learning Outcomes: Understanding of whole deal cycle, Enhancement of knowledge of tools like Ms Excel, Factset, Mergermarket.

Brief Description of working environment, expectations from the company: It was a great learning experience here in Genpact Gurgaon with all employees ready to help anytime.The employees were highly professional and have very good technical knowledge .The timings were 11 - 8 pm .It would have been better if we would have knowledge of Merger and Acquisition research and Analysis before in hand.

Name: Riti Nauharia (2015H149268P)

Student Write-up

Short Summary of work done during PS-II: Market research.

Tools used (Development tools - H/w, S/w): Excel PowerPoint tableau.

Objectives of the project: Infrastructure dashboard creation.

Outcomes of the project: Dynamic dashboard.

Major Learning Outcomes: Tableau dashboard development.

Brief Description of working environment, expectations from the company: Good.

Name: Kashish Khandelwal (2013A5PS909P)

Student Write-up

Short Summary of work done during PS-II: Project in PS 2 that I am doing is trends in merger and acquisition of pharmaceutical companies which is related to investment banking. It includes valuation, company profiles, transaction comps, trading comps, company screening, among others.

Tools used (Development tools - H/w, S/w): Tools used were Microsoft excel, Microsoft PowerPoint Microsoft word, Microsoft outlook.

Objectives of the project: Trends in m&a of pharmaceutical companies.

Outcomes of the project: Learning about valuation of M&A deals of pharmaceutical sector and there trend.

Major Learning Outcomes: Valuation, deep knowledge of ms excels and PowerPoint, company profiles and transaction comps, trading comps.

Brief Description of working environment, expectations from the company: The company provided a very good learning experience.Provided a good working environment and all the employees were helpful. The company is based on theInvestment banking.

PS-II Station: GiftXOXO, Bangalore

Student

Name: Neeraj Bedmutha (2013A4PS171G)

Student Write-up

Short Summary of work done during PS-II: The work done for this semester was on digital media marketing. However the kind of work is subject to the company requirement. Students have worked in analytics department, business development as well.

Tools used (Development tools - H/w, S/w): Facebook Advert Manager, Google Analytics.

Objectives of the project: Marketing.

Outcomes of the project: Leads.

Major Learning Outcomes: Online Marketing Strategies.

Brief Description of working environment, expectations from the company: Amazing Environment and culture.More than 150 employees in this startup. Work is subject to company requirement. Location is good, lots of accommodation around.

PS-II Station: Goldman Sachs India Pvt. Ltd. - Operations, Bangalore

Faculty

Name: Shekhar Rajagopalan

Comments: Expectations from industry: Goldman Sachs: Soft skills Oral and email communication.

Student

Name: Deevita Agarwal (2013B3PS970P)

Student Write-up

Short Summary of work done during PS-II: Mitigating the risk associated with the trade booking and legal documentation of structured derivative transactions through independent and thorough review. Ensuring all the trade economics, pay-off profiles and pricing parameters are correctly captured in the risk management system.

Objectives of the project: Risk mitigation by consolidating all the outstanding issues pending with traders.

Outcomes of the project: 1. Reduced turnaround time, further saving extra effort by the teams in following up to get these issues cleared. 2. Improved the efficiency of each employee 3. Risk mitigation as untimely clearance of issues can lead to pricing and settlement breaks.

Major Learning Outcomes: 1. Knowledge of internal softwares and some basic techniques 2. Learned to coordinate and interact with different teams' 3.Gained insight into the process of research by running a manual pilot and then automating it.

Brief Description of working environment, expectations from the company: The working environment is very nice. All the employees are very friendly and at the same time professional. This is a flat organization where you get the opportunity to talk with people high up the ladder.

Name: Bhargavi Tippa (2013B3PS616G)

Student Write-up

Short Summary of work done during PS-II: My work at the firm was mostly BAU (Business as usual). I got trained in two different asset classes namely PIPG (Private investor Product Group) and Bank Loans.In the PIPG space, I got to learn how different kinds of trades are booked in different calculators. Understood the payoff of each trade and then reviewed it against the legally binding document.In the Bank loans space (Goldman offers private loans to companies), understood the key economic terms in the legally binding document and then reviewed it against company specific software.

Tools used (Development tools - H/w, S/w): It was mostly company specific and a bit of excel.

Objectives of the project: Reduce the risk associated with trades.

Outcomes of the project: Was able to reduce the risk significantly.

Major Learning Outcomes: Could relate how the current happenings in the economy have an impact on the kind of trades clients prefer to buy.

Brief Description of working environment, expectations from the company: People at the firm are extremely friendly.

Name: Vivek Bansal (2013A2PS520P)

Student Write-up

Short Summary of work done during PS-II: I was part of the risk management team in Goldman Sachs. The centre of my work was around managing risk for the firm by revewing the legally binding trade documents signed between the firm and the client. It involved understanding the finance and financial terms involved, getting used to the legal language and the use of the company's own database to know the trade history. I worked in the Equity asset class and all my trades were based on shares, indices and funds. All such trades were basically derivative products and thus I could learn some of the practical implication of derivatives that I had studied in the finance courses back in BITS. Every new flavor of the trade has its own structure and payoff conditions and thus involved different financial instruments. I worked on 4-5 different flavors and it was interesting to learn about new instruments.

Objectives of the project: The objective of my project was to manage risk in different kind of trade reviews in the Equity asset class by learning financial tools and instruments and legal terms used in such trades.

Outcomes of the project: I gained aptitude for different financial tools and their combination to manipulate payoff conditions for the trade.

Major Learning Outcomes: I got an understanding for financial terms and tools and how these are used in live trades.

Brief Description of working environment, expectations from the company: The work culture of Goldman is awesome. People here are really helpful and it's always about team first and then personal gains. I worked with a team in Operations division and I feel that the learning curve was high in the beginning but with time you need pick different projects to stay fresh and learn new things. The working hours can be really intense at times when the team is facing high volumes and can go as long as 12 hours a day. The kind of work also depends a lot on which team you are a part of. The work can be related to actually using finance knowledge to ensuring and managing the work flow-all depends on the team. It's a good place to start with if someone wants to make a career in finance as you will get to be a part of the financial process of a trade in some way.

Name: M Chaitanya Kiran Rao (2013AAPS224H)

Student Write-up

Short Summary of work done during PS-II: I was involved in the BAU (Business As Usual) aspect of the automation team apart from a project on BDM (Business Decision Modeling) Build.

Tools used (Development tools - H/w, S/w): Industry Standard tools

Objectives of the project: 1. Regular builds and enhancements in logic as a part of BAU (Business As Usual). 2. BDM builds of an asset class workflow.

Outcomes of the project: 1. completed the BDM build.2. Regular Enhancements in logic as a part of BAU

Major Learning Outcomes: 1. Exposure to financial products. 2. on the job training on various industry standard tools. 3. Professional communication in emails, telephone etc.

Brief Description of working environment, expectations from the company: The working environment is professional and interns are treated at par with employees in accountability and responsibility. A lot

can be learnt in terms of honing a professional attitude. However, the work on finance is limited (Most of the interns also lack any previous financial knowledge). The environment is intense in general often demanding long working hours.

Name: Mohit Saluja (2012B4A3642P)

Student Write-up

Short Summary of work done during PS-II: I interned in Operations department in the Position Control team for equity derivative products. My work here involved daily reconciliation of trade done on daily basis which affects the p&l of the firm which constituted of my usual business here. The learning curve was very steep in the starting few days and considering that I am from engineering background I was given a lot of projects involving mathematical models to highlight the risk depending on various factors implemented using Excel and Altreyx. I was a part of BI team along with this team where I was given projects related to automating the daily activities done in the various teams involved in Operations.

Tools used (Development tools - H/w, S/w): S/w.

Objectives of the project: The major objective of my projects was to reduce manual labor and somehow save few minutes/seconds of my team work daily by automating the work wherever possible. The daily activities involved reconciliation and point out any discrepancy to the respective teams so that it doesn't affect the smooth functioning of operations and the trading desk.

Outcomes of the project: My few projects got implemented here in Goldman and are being used daily by the teams here in Operations. I have made few macros here which are being used by my team already and will surely save a substantial time of my team daily.

Major Learning Outcomes: The work doesn't require a deep understanding of finance courses but knowledge regarding excels and visual basic will give a boost to individual considering the expectation of the firm. An intern is treated just like a normal employee, with regular training sessions taking place during routine work. The work culture and ambiance help us blend easily in the working environment. This was my first internship where my work had an important role to play in the day to day performance

of the team. I learnt how to manage my time and plan ahead to meet deadlines, time management is something I have gained here and will help me in my future endeavors.

Brief Description of working environment, expectations from the company: I would take this opportunity to highlight the enormous amount of knowledge I learnt in the form of tools that helped me expand my knowledge base in filed of Analytics. Considering the future of big data it enhanced my understanding of the concept and will definitely give a boost to my future coming project.

Name: Devanshi Kotak (2013A8PS168P)

Student Write-up

Short Summary of work done during PS-II: The work involved use of data analytics to optimize cost borne by the firm.

Tools used (Development tools - H/w, S/w): Tableau.

Objectives of the project: Better understanding of space utilization to reduce the costs.

Outcomes of the project: Better utilization of space by data driven analysis.

Major Learning Outcomes: 1. Introduction to data analytics and tools like Tableau 2. Working with global and cross functional teams.

Brief Description of working environment, expectations from the company: The work environment is extremely welcoming and collaborative. You work with global teams and get exposure to global projects. The internship is a very well planned one with exposures to different kinds of training and a chance to interact with the senior most leadership of every division and region.

Name: Akshat Khandelwal (2012B4A4623P)

Student Write-up

Short Summary of work done during PS-II: The work in Operations Division primarily involves carrying out the business as usual of your team. From time to time minor projects related to business intelligence or analytics might be given by the manager.

Tools used (Development tools - H/w, S/w): MS Excel and proprietary firm systems.

Objectives of the project: To carry out trade reconciliations as a part of BAU and work on other minor projects.

Outcomes of the project: Successfully performed the tasks mentioned above.

Major Learning Outcomes: Basic knowledge of financial markets and instruments and MS Excel.

Brief Description of working environment, expectations from the company: The working environment is employee friendly. The flat management structure ensures that even senior leaders of your department are easily approachable. Chances of getting a PPO are good if you work sincerely.

Name: Gamini Singh (2013A1PS740H)

Student Write-up

Short Summary of work done during PS-II: Main focus of the work was Business As Usual (BAU). I specialized in Corporate Loans and worked on systematically capturing the economics of these loans delineated in documents like-Credit Agreements, Term Sheets, etc.- that are processed at different stages in the life cycle of loans (Primary, Secondary markets). Attention was given to capture the nuances of each document keeping in mind the impact generated by the flow of data captured from Front to Back processes. I also worked on a project facilitating automation of daily risk reporting by using Excel Macros. This helped reduce manual intervention in the process of calculation and analysis of outstanding risk by quantifying it in the form of "Risk Quotient". It also, helped in reducing the time spent, otherwise daily, on the report generation task.

Tools used (Development tools - H/w, S/w): Microsoft Excel VBA and Excel Macros.

Objectives of the project: Automation of Bank Loans Risk Analysis.

Outcomes of the project: Risk Quotient quantifies the risk based on the volume and age of deals. Specific to nature of the deal, revamped banding Grids are set to calculate the Risk Quotient from the database. This helps accurately capture the changing trends in the process of risk scrubbing, improves report generation efficiency and considerably reduces the time spent daily on the manually generating the risk analysis report.

Major Learning Outcomes: Microsoft Excel VBA.

Brief Description of working environment, expectations from the company: The employees follow the highest standards of professionalism and work ethics. The teams function collectively as one unit, despite the obvious geographical disparities and richly diverse professional and personal backgrounds of the employees. The dynamic working environment made me discover several unfamiliar parts of my personality. I learnt the tactics to invest on my strengths and and simultaneously worked on the areas which were identified through constructive feedback from my team on my performance.

PS-II Station: HDFC Bank, Chennai

Student

Name: Deepak Singh Rawat (2015H149285P)

Student Write-up

Short Summary of work done during PS-II: HDFC gives you great opportunity to craft new edge of Analytics solutions. I've worked on one such project, fraud Analytics along with other ad-hoc projects. The Learning mode is both self and guided which helped me in learning predictive modeling concepts and machine learning algorithms swiftly. I'm happy that my mentors kept a faith on me for building a complex model and provided with enough direction to be able to learn and build Analytics based solutions end to end.

Tools used (Development tools - H/w, S/w): Rstudio-Server, R, Excel, Angoss Knowledge studio, SAS and SQL.

Objectives of the project: Help bank in identifying fraudster among credit card application using social media history of applicants.

Outcomes of the project: Prediction model which helps in capturing more number of fraudster within lesser number of samples.

Major Learning Outcomes: Analytic based solution building approach including Machine learning algorithms.

Brief Description of working environment, expectations from the company: The working environment is encouraging and HDFC do gives you good work-life balance while keeping you on toes within office hours by challenging your skills by giving best of the Analytics projects. The infrastructure is great and adds to the positive energy at workplace. You would find ample amount of guidance in terms of career and Analytics here which is a life time experience.

PS-II Station: HDFC Bank, Mumbai

Student

Name: Aditya Shirodkar (2012B1A4655G)

Student Write-up

Shot Summary of work done during PS-II: At HDFC I was assigned to the cross-sell division of the risk analytics department. This division is responsible for locating customers as targets for new campaigns. In this team, I created a model for the inclusion of customers for loan campaigns based on their demographics such as rurality. This tool was used to offset the urban-leaning tendencies of the bank, where customers with higher but more fluid income were favoured. Next, I created a text mining solution for utilizing text entry data (such as a passbook entry) to locate customers for loans. Every word was parsed and categorized and then the combination of categories lead to target customers. Alongside this, other routine work was also carried out such as extracting and analyzing data, participating in meetings, presenting results, and getting a good understanding of banking systems and corporate jobs.

Tools used (Development tools - H/w, S/w): Computer with connectivity to RStudio and SAS servers (statistical analytics tools). Tabulation in MS Excel.

Objectives of the project: To offset the urban leaning tendencies of bank campaigns by modifying cutoffs to better suit a broader and more diverse clientele; to make a text mining solution to extract data from textual transaction descriptions for cross-sell campaigns.

Outcomes of the project: Suitably and reasonably modified campaign cutoff parameters based on rurality of customers; a text mining solution was proposed with recommendations to overcome hardware limitations.

Major Learning Outcomes: Put to use coding ability acquired in college, habituated self to a fast corporate life, learned a great deal about the banking and finance sector.

Brief Description of working environment, expectations from the company: The working environment is standard and sterile, and the culture is corporate, as expected from a bank. The company expects you to put in more than your designated hours, often asking its employees to stay well past seven. The

jobitself is tedious but not difficult, and can get repetitive after some time. The facilities available at the business park are good, and it is well located.

Name: Vaibhav Surange (2015H149234P)

Student Write-up

Shot Summary of work done during PS-II: Dialer and collection analytics, dashboard and warehouse creation.

Tools used (Development tools - H/w, S/w): Excel and analytics language R.

Objectives of the project: To enhance dialer performance which is currently run at less then 30 percentage.

Outcomes of the project: Improved dialer efficiency and rooted out bottlenecks.

Major Learning Outcomes: Stastical and analytics language R. Collections process of retail bank credit cards.

Brief Description of working environment, expectations from the company: Good work culture.

Name: Deep Shah (2015H149257P)

Student Write-up

Shot Summary of work done during PS-II: Collections Department. Automated settlement processes to reduce the manual work and costing and budget analysis of collection process with analysis.

Tools used (Development tools - H/w, S/w): Excel, vba macros.

Objectives of the project: To do analysis of the Costing project and do automation of some other process.

Outcomes of the project: Completed the model and automated 50% of the process.

Major Learning Outcomes: Analysis, programming, challenging work tasks, multi tasking, etc.

Brief Description of working environment, expectations from the company: Colleagues were totally supportive and showed great deal of professionalism in the work they do. Good environment.

Name: Kallapari Pavan Sudheendra (2015H149225P)

Student Write-up

Shot Summary of work done during PS-II: As a part of risk analytics team, I built a scoring model, reject inferencing, and network analysis of customers.

Tools used (Development tools - H/w, S/w): R and SAS.

Objectives of the project: To access the behavior of peers on internal customers.

Outcomes of the project: A trend to find out the relation between the networks of customers on their defaulting rates.

Major Learning Outcomes: Deep understanding of analytics and various techniques.Valuable inputs on banking system.

Brief Description of working environment, expectations from the company: It was nice. People are cooperative and helpful. The knowledge they shared and interactions made were awesome.Good to go if it's analytics.

Name: Binu (2013B5PS850H)

Student Write-up

Shot Summary of work done during PS-II: I worked in sli policy department, the main work involved analysing the portfolio and finding out the riskier segment. I used r SQL and angoss for these analysis.

Tools used (Development tools - H/w, S/w): Excel r SQL angiss.

Objectives of the project: Removing the risky base and sourcing the good base.

Outcomes of the project: Not allowed to reveal that.

Major Learning Outcomes: Decision making, analytics.

Brief Description of working environment, expectations from the company: Really good projects are given, some of the co-workers are really helpful and supportive, working hours are long.

PS-II Station: Hourglass Research, Mumbai

Student

Name: Mohit Garg (2013A4PS182G)

Student Write-up

Shot Summary of work done during PS-II: Work relates to field of patent analytics. Patents need to be searched and categorized into different categories.

Objectives of the project: 1.To checks whether a given technology is patentable or not 2. To analyze a particular technology domain for all relevant patents and form meaningful trends on the direction the technology is going and how to benefit from it.

Outcomes of the project: A search report showing different patents that resemble a given invention for searches and a landscape report showing collection of patents, search strategy used and overall trends observed.

Major Learning Outcomes: How are patents structured, conditions for patentability, patent office, infringement, freedom to operate searches, landscapes etc.

Brief Description of working environment, expectations from the company: Working environment is informal, relaxed and open. Company expects equal work to be by interns. The team is very small around 15 people.

Name: Nalagesi Siva Sandeep Reddy (2013A8PS676G)

Student Write-up

Shot Summary of work done during PS-II: I worked on two Patentability searches, two Landscapes and three Infringement analysis projects. Patentability search results gives an overview about the chance of a patent getting granted.

Infringement analysis gives an overview about products using inventor's innovation and rights to inventor to take an action by filing an infringement lawsuit. Landscape Analysis gives clients knowledge about the field, its white spaces and opportunities for research. Landscape Analysis is done to know about the current state of innovation in a particular technological area that helps clients to get inspired to innovate.

Tools used (Development tools - H/w, S/w): Excel, 'Orbit.com' online data base for patent search.

Objectives of the project: Patent Analytics – Infringement Analysis and Patent Landscapes.

Outcomes of the project: I worked on two patentability searches, two landscapes and three Infringement analysis projects. Outcomes of this projects are such that results of one patentability search is exact match of given disclosure by client. Landscapes results are also satisfactory.

Major Learning Outcomes: As I worked on patentability searches and Landscape analysis projects, I came to know about the latest technologies used in different fields and got an opportunity to read about the latest patents on cutting edge technologies.

Details of papers/patents: In the last five months I have read more than 1000 patents while working on Patent landscape analysis and Infringement analysis.

Brief Description of working environment, expectations from the company: Hourglass Research is a leading Intellectually Property (IP) end-to-end solutions provider helping organizations around the world secure, manage and monetize their IP assets. It was founded in 2010. Employees of Hourglass Research are extremely friendly and supportive. Project managers are also very supportive and gives constant feedback which helps in improving my abilities. Regarding expectation from the company knowing basics of Excel is an advantage but not necessary and student should have enthusiasm and patience to read patents. Students' analytical abilities are also important.

PS-II Station: HSBC, Bangalore

Student

Name: ArunodoyBhattacharjee (2015H149219P)

Student Write-up

Shot Summary of work done during PS-II: Working on an automation project related to financial crime compliance.

Tools used (Development tools - H/w, S/w): R, Excel.

Objectives of the project: Automation of a risk analysis exercise.

Outcomes of the project: Automated Tool to monitor transaction risks.

Major Learning Outcomes: Financial Crime Compliance, R language, anti money laundering etc.

Brief Description of working environment, expectations from the company: Working environment is pretty good. Team mates are very supportive and helpful.

Name: Anupam Roy (2015H149233P)

Student Write-up

Shot Summary of work done during PS-II: Title- Streamlining of Global Planning Model- For analysing the business of various regions, the planning process in all the regions should be in sync. This is not exactly the case when there are large amounts of data to be handled. Also the difference in the processes of business and local norms make it extremely difficult to streamline the businesses of various countries. The Global Model Harmonization project was set up to deal with the above challenge. Its aim is to bring up the various businesses in various countries where HSBC operates, onto a common platform.

Tools used (Development tools - H/w, S/w): Ms- Excel.

Objectives of the project: To create a common Funding Model to be used by two countries.

Outcomes of the project: Common funding model.

Major Learning Outcomes: Advanced data modeling.

Brief Description of working environment, expectations from the company: My learnings- >in depth idea of how hedging works in banks >Knowledge on various current accounts >Global exposure, working closely with global heads >Working on multiple projects together and under the strictest deadlines. >The 'Corporate Culture.

PS-II Station: IndustryARC, Hyderabad

Student

Name: Gaurav Singh Rana (2013D2PS981P)

Student Write-up

Shot Summary of work done during PS-II: Currently working on market research in my ps2 Industry ARC.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: To collect the data for market research report.

Outcomes of the project: Help in making report.

Major Learning Outcomes: Who the research is done in market Research companies primary and secondary both.

Details of papers/patents: Data Base Project.

Brief Description of working environment, expectations from the company: The environment of the company is good there are nearly 150 employees. Very friendly people they are always there to help you.

Name: Prasun Anand (2012B1A1645G)

Student Write-up

Shot Summary of work done during PS-II: I work with PHP and Google MAP apis to develop a tool that can be used to locate nearby shops in a locality that is used by a ecommerce company to help in finding nearby shops for ease of doing shopping which helps in promoting local market and saving money on transportation and handling charges.

Tools used (Development tools - H/w, S/w): PHP, Ubuntu, Wordpress, Linux, MySql, JavaScript and query.

Objectives of the project: To use google maps to help locate nearby shops using device GPS location.

Outcomes of the project: A modular application written in PHP, CSS, HTML and Javascript that can be used for locating nearby stores.

Major Learning Outcomes: PHP, CSS, HTML, LINUX andUBUNTU.

Brief Description of working environment, expectations from the company: Good work environment and friendly atmosphere.

Name: Kunal Agarwal (2013A1PS551G)

Student Write-up

Shot Summary of work done during PS-II: The data was obtained by calculation on Microsoft Excel sheets. The data included in the report is obtained from the association website of oilfield surfactant market.

Tools used (Development tools - H/w, S/w): MS Excel, Ms Word.

Objectives of the project: To prepare a report and do extensive market analysis of Oilfield Surfactant Market.

Outcomes of the project: Research was done on the Oilfield Surfactant Market extensively. The data was obtained by calculation on Microsoft Excel sheets. This report covers all the drivers and restraints for the surfactant market with the global CAGR and revenue. Segmental revenues are given in the form of pie diagrams.

Major Learning Outcomes: Prepared a syndicate report on oilfield surfactant market which includes the market estimation (ME) Sheet and profiling of various top companies that manufacture Surfactant. I learnt to make Table of Content, Sample Brochure, various type of graphical representation.

Brief Description of working environment, expectations from the company: I was in Chemical Department of my allotted PS station Industry ARC. All the team members were helpful.

PS-II Station: Infiniti Research, Bangalore

Student

Name: Surabhi Chakravorty (2015H149238P)

Student Write-up

Shot Summary of work done during PS-II: At Infiniti, I am into Secondary research domain and in food and beverage vertical. I am given research titles every week and then I have to do in-dept secondary research on the topics, collect all the data points, analyze it, forecast the market value for the given years (usually for 017-2021) and then write it in a report.

Tools used (Development tools - H/w, S/w): Microsoft.

Objectives of the project: To write reports on the allotted titles in given time.

Outcomes of the project: To complete the report and find the present market value and forecast it.

Brief Description of working environment, expectations from the company: There is little work-life balance in the company. The working environment is friendly, most of the times.

PS-II Station: InMobi - Software Development, Bangalore

Student

Name: Avesh Kumar Singh (2012B5A1680P)

Student Write-up

Shot Summary of work done during PS-II: Business Operation - Campaign Manager - To Know the return on investments on their marketing spends Digital marketing is nothing but marketing done on digital medium To sum up the advantages of Digital marketing Target marketing Easy calculation of ROI High ROI Budgeting and forecasting Efficient and effective campaign Attribution modeling (set of rules, that determines how credit for sales and conversions is assigned to touch points in conversion paths).

Tools used (Development tools - H/w, S/w): Excel, MS PowerPoint and SQL.

Objectives of the project: Understanding of Digital advertising Ecosystem and Delivery management.

Outcomes of the project: Impact of Digital advertisingAdvantage of Mobile advertising over other advertising medium Role of Data analytics in Digital advertising.

Name: Mansa Kedia (2013ABPS640P)

Student Write-up

Shot Summary of work done during PS-II: I was part of the tech team of the off-network part of InMobi. I had taken the complete ownership of a live project which dealt with automating demand and creating offers which then helped fetch revenue. Along with this, I developed a few dashboards, wrote daily cron jobs, and built many internal tools. There were also many parallel issues of the Sales team that needed to be managed and taken care of.

Tools used (Development tools - H/w, S/w): Java, python, APIs.

Objectives of the project: Development and Automation of Tools.

Outcomes of the project: Can't mention much. Just that it reduced manual effort and helped in fraud detection. The live project now generated more than 30% of the revenue of the team.

Major Learning Outcomes: I learnt a lot here. There were some really challenging projects and I had a really amazing time learning about new languages and techniques.

Brief Description of working environment, expectations from the company: The culture here is amazing. Recommended for anyone who really wants to learn something, especially for people not from CS but have an interest in exploring it, awesome opportunity.

Name: Sanchit Samnani (2012B4A4610P)

Student Write-up

Shot Summary of work done during PS-II: My work in the company focused on learning of how adtech companies work on demand and supply side. My work basically focused on supply side management for affiliate business of InMobi. My work also included extensive data analysis to do weekly reporting for my General Manager and Chief Revenue Officer of the company.

Tools used (Development tools - H/w, S/w): MS Excel, R language.

Objectives of the project: My work in the company focused on learning of how adtech companies work on demand and supply side. My work basically focused on supply side management for affiliate business of InMobi. My work also included extensive data analysis to do weekly reporting for my General Manager and Chief Revenue Officer of the company.

Outcomes of the project: Increased the revenue of team wadogo by 15%. On boarded a new German Ad Agency and scaled their account from scratch to $10k per month which leads to additional revenue for team Wadogo. I have been handling North America supply side business for Wadogo. Handled 40 publishers globally.

Major Learning Outcomes: I have learnt MS Excel and R language as analytical tool. My work involved a lot of analytical skills along with sales.

Brief Description of working environment, expectations from the company: InMobi offers two profiles tech and business. I'm doing my PS2 currently at InMobi. I work on business side. As far as kind of work and work culture is considered its amazing place to work at. It gives you best exposure to Business analytics, to business development to strategy and operations which no other firm can. The people are very friendly and smart. You get fresh graduates from colleges like BITS and IITs as well MBA grads from ISB, IIM, and Wharton etc. PPO chances are very decent if you work hard it will show of.And the company is expanding a lot. They give you equal work load and responsibility like a permanent employee. So you have lot of responsibility as far as work is considered. And there are lot of perks which other firms won't give. In addition to stipend of 25k you get amazing tasty food all day. Breakfast, lunch, snacks and dinner. Even for tech side people it's a very good place to work at. You get to work on real time problem and it's not a normal back end job. The pay for IT people is at par with any other IT or tech firm. Same goes with business side.

Name: Puneet Choudhary (2012B3A7512G)

Student Write-up

Shot Summary of work done during PS-II: I was working on business side in Wadogo Team of InMobi. I had various roles during my internship period. Most of these roles are client facing and provides really good exposure to real world business scenarios. All the actions that I had to take had an associated revenue impact so it was really crucial to make right decisions. Overall company culture and work is really good.

Tools used (Development tools - H/w, S/w): Excel, Has Offers

Objectives of the project: To learn different terminologies used in Ad-Tech industry.The working of affiliate markets. Supply side partner management. Optimizations of campaigns. Generate and analyze profitability reports. Increase revenue of Wadogo team.

Outcomes of the project: 3 x growths in revenues generated from a self serve platform. Reduced time to make weekly profitability report from 2 hours to 15 mins by creating a general template. Significant increase in revenues by generating additional demand from affiliate partners.

Major Learning Outcomes: Deep understanding & functioning of affiliate markets. Sharpened analytical and Excel skills. Learnt various optimization and fraud detection techniques. Improved communication and client management skills.

Brief Description of working environment, expectations from the company: Company culture is probably the best in the industry. They hire really smart people mostly from top colleges or from good companies. There are huge learning opportunities. Work pressure is little high, but you get to learn a lot more in return, so it's worth it.

Name: Sampurna Ray (2013A1PS539H)

Student Write-up

Shot Summary of work done during PS-II: My work in the company focuses on learning of how Mobile Tech companies work on demand side. My area of work is based on demand side managements for Affiliate Networks. My work involves managing the demand side clients globally to bring in the diversity of campaigns for Wadogo team as well as providing quality users to advertisers, thus fulfilling their KPIs and providing them required ROIs. My area of work require daily analysis of reports to scale up business and make various optimizations.

Tools used (Development tools - H/w, S/w): EXCEL, HASSOFFERS.

Objectives of the project: To increase revenue through third party demand.

Outcomes of the project: Increase in revenue.

Major Learning Outcomes: How mobile advertising works.

Brief Description of working environment, expectations from the company: Amazing work culture and environment. Basic expectations as to working hard and have flexible work timings.

PS-II Station: J. P MORGAN CIB - e trading, Bangalore

Student

Name: Amrutha Sai Gattu (2013A7PS160H)

Student Write-up

Shot Summary of work done during PS-II: The work assigned was mainly related to support. We had to enhance the support for various existing processes. We improved the notification system to end users in our first task. We consolidated all emails into one email in our next task. So the main objectivewas to enhance support. We developed the code in python and KDB+.

Tools used (Development tools - H/w, S/w): Python, KDB+.

Objectives of the project: Enhancement of support.

Outcomes of the project: Improved notification to the end users.

Major Learning Outcomes: We will learn how to work professionally. We stick to deadlines; we give the status of the project regularly. We become more organized and this will help us in doing the tasks better.

Brief Description of working environment, expectations from the company: We were given a laptop to work. Other tools like a locker, land phone, extra monitors were also provided. The timings were pretty flexible. We worked for 8-9 hrs daily on average. The company expects us to do the tasks on time. We prepare our own timeline to complete the tasks we take up. This is a very good way of organizing our tasks. We are responsible for what we develop and hence we were required to monitor the code once it was live.

PS-II Station: J. P MORGAN CIB - e trading, Mumbai

Student

Name: Shubham Khandelwal (2013A7PS131P)

Student Write-up

Shot Summary of work done during PS-II: As a part of the PS-II at JPMC CIB Etrading, I was allotted three different projects, relating to different etrading tools. The first project was to develop an etrading console application, which displays the live fix trades, along with other details of its trade location, time, trade type etc. The entire application was developed using Python as a programming language. The application also involved functionality of trade filters and popup notifications relating to them. The second project was based on deploying FIX (Financial Information exchange) based micro services over AWS. This involved development of a FIX based client and server, and their respective deployment over AWS, using swagger API for triggering the application. The third project was to develop a plug-in for the proprietary order gateway, so as to assist it in FIX based communication. This project was highly challenging as I got to learn about FIX protocol, along with how to deploy a dummy FIX client and an exchange simulator. I got to learn a lot during this PS II program at JPMC CIB eTrading, about financial terms along with technology deployed for financial aspects.

Tools used (Development tools - H/w, S/w): Python, Java, QuickfixJ, enaml.

Objectives of the project: To build an eTrading message console application that displays live fx trades in python To build a plug-in for the proprietary order gateway for FIX based communication To develop FIX based micro services and deploy them over AWS.

Outcomes of the project: An eTrading message console application, which displays fx trades was developed using python and energy A plugin was developed that convert proprietary communication API to FIX based messages and assisted the order gateway Micro services were deployed including a FIX based client and server over AWS.

Major Learning Outcomes: Got to learn about Financial Information exchange protocol along with assisting tool of QuickfixJ. Also learnt a lot about trading, order details and other financial aspects.

Brief Description of working environment, expectations from the company: The working culture is quite warm and healthy. The manager was very helpful and guides you a lot. He gave three different projects to make sure that we get to learn as much as possible. The mentors were guiding throughout the duration of internship. Also, knowledge of finance is not a prerequisite, you only need to know basic coding concepts. There are many facilities available like gym and cab services.

Name: Samish Bedi (2012B3A7735P)

Student Write-up

Shot Summary of work done during PS-II: I worked on three projects during my PS-2 at JP Morgan. First project was to build an eTrading message console that displays all FX trades taking place in real time using various JP Morgan platforms. Second projects were to build a quick fix-j adapter that enables clients and proprietary algorithms to communicate with a FIX protocol based proprietary order gateway. Third project was to build and deploy FIX protocol based client and server micro services over AWS cloud platform. It also included testing micro services using cucumber-spring platform.

Tools used (Development tools - H/w, S/w): FIX (Financial Information eXchange) protocol, Python, Java, AWS, Cucumber, Athena, ENAML, quickfix-j, Maven.

Objectives of the project: 1.To develops an updated and user friendly Enaml based message console.2. To develop a FIX protocol based plugin/adapter to facilitate communication with new and more efficient order gateway that uses FIX protocol. 3. To deploy and test micro services over AWS cloud platform.

Outcomes of the project: Enaml based message console is a second generation update over existing message console. It is user-friendly, light weight and faster as compared to its Java-spring predecessor. Adapter for FIX based communication had been integrated with eTrading platform and a new order gateway has been put in place along with the old order gateway which will be finally removed. Micro services have been successfully deployed over AWS cloud.

Major Learning Outcomes: I was introduced to AWS cloud platform and working on such a hot shot technology has made me gain tremendous exposure on developing and deploying micro services over cloud. Apart from this ENAML, a python based UI, was another major learning along with Cucumber-spring and Maven based architectures.

The most exciting and new part was introduction to FIX protocol and using quickfix-j to create clients and servers to communicate using FIX protocol. FIX protocol is major protocol used for electronic trading with major exchanges around the world.

Brief Description of working environment, expectations from the company: The companyexpects you learn as much as possible and work in depth on eTrading platforms. I was introduced to major and new projects of high priority and importance to business and my contributions created a visible impact. Work environment is highly professional and you are expected to be driven and curious. Our manager, Praveen Sharma, is very accomodating and encouraged us to learn beyond the technical skill set.The PS experience has trained me immensely in the technologies and skills required to work in corporate life while preparing me to handle the work pressure and stress to strike the perfect work-life balance. It has also widened my knowledge base and awareness of the work done in Investment Bank.

PS-II Station: J.P. Morgan Chase, Bangalore

Student

Name: Apoorva (2012B2A7637G)

Student Write-up

Shot Summary of work done during PS-II: My role as an intern in JPMC was essentially that of an analyst. When I joined JPMC, they were migrating from TLM (a third party reconciliation software) to iRecs (a JP Morgan inbuilt reconciliation software). I was given the responsibility to analyse the data related to reconciliations to recognize the areas where iRecs efficiency could be increased compared to TLM. I also worked on BRDs and SLAs for the Robotics related projects, did a comprehensive study of Corporate Actions from the company's perspective and presented all my learnings and findings.

Tools used (Development tools - H/w, S/w): MS Excel, MS PowerPoint, Cognos (JPM's reporting tool), iRecs, TLM, WINS (ledger accounting system), TITAN (custody accounting system).

Objectives of the project: To increase the efficiency of iRecs such that minimal human interference was required.

Outcomes of the project: I suggested some auto-matching and auto-coding rules, which are expected to increase iRecs efficiency by approximately 12% once the suggested rules are built into iRecs.

Major Learning Outcomes: Learned Advanced Excel, various financial and accounting terms and concepts, the reconciliation process, and improved my presentation skills.

Brief Description of working environment, expectations from the company: My team always encouraged me to learn, whether through online training or through hour long discussions with the SMEs (subject matter experts). I was told to absorb as much knowledge as possible, and not just limit myself to the kind of work I was supposed to do. All they expected of me was to have the urge to learn. They patiently guided me through my projects. Even though it was hectic at times, the constant support from the team made it seem like a cake-walk.

Name: Vibha C (2015H149244P)

Student Write-up

Shot Summary of work done during PS-II: I was a part of the Corporate Investment Banking, Technology division. I was allotted a project that aimed to perform robotics process automation of prime processes.I was trained in a tool called Automation Anywhere. I worked as a part of a team that implemented 3 bots at the end of my internship period.I also monitored project progress by tracking activity, resolving problem, publishing progress reports, recommending actions.

Tools used (Development tools - H/w, S/w): Automation Anywhere.

Objectives of the project: Automate prime financial processes at JP Morgan using RPA technology.

Outcomes of the project: Implemented 3 bots at the end of my internship period.

Major Learning Outcomes: Learnt RPA tools and the intricacies involved in project management.

Brief Description of working environment, expectations from the company: The working environment was very hectic. We were forced to work on projects that held no interest to us. Also, allotting a project involving coding to an MBA student increased my misery. I expected the company to give me a relevant finance oriented learning or at the least project management responsibility.

Name: Aakash Nair (2013A1PS652H)

Student Write-up

Shot Summary of work done during PS-II: The profile in which we worked was that of Robotics Process Automation (RPA) professional. There is no coding required and only logic is required for this work. We had to automate all projects that involved no human decision making. No finance course necessary.

Tools used (Development tools - H/w, S/w): Automation Anywhere.

Objectives of the project: We had to automate all projects that involved no human decision making.

Outcomes of the project: The Company could save a lot of money as one bot created could work as efficiently as close to 4 full time employees.

Major Learning Outcomes: Learnt new software. Could understand multiple processes that would not have been achievable had I been working in the Operations team.

Brief Description of working environment, expectations from the company: We came here with the expectation that we would be able to use something that we learnt in our finance courses in college. However, we were disappointed that there was not one person in the entire company who was actually using any of his cognitive abilities. The work culture is also very bad with continuous tension due to deadlines that can never be met. Very long working hours and all you get paid for this is pittance. We worked on weekends also. There are no opportunities for a P.P.O. But even if you do get one then it will only mean that you will get tortured further. Do not opt for this if you want to do good work. Take this if all you want is a brand name.

Name: Thatikonda Raghunandan (2013AAPS148H)

Student Write-up

Shot Summary of work done during PS-II: Since the trade logs/blotters are sent by different clients the formats used by each is different. A standard template has been designed which covers all required parameters for performing trade processing and reconciliation activity across clients. Xceptor tool will be used to convert the files to a STD file format which would feed the data to BOT for processing.

Tools used (Development tools - H/w, S/w): Automation tools.

Objectives of the project: Automate the manual touch point in the process by way of Robotics, Xceptor which would help on increasing the productivity and thereby eliminate manual work.

Outcomes of the project: How automation is changing the world we see now. How this is going to help for banks to minimize their manual work and increasing productivity.

Major Learning Outcomes: Learning how to use automation tools.

Brief Description of working environment, expectations from the company: Working environment is not that good and timings are also very odd, sometimes you may have to stay back due to some commitments.

Name: M S R KARTHIK (2013A1PS808H)

Student Write-up

Shot Summary of work done during PS-II: In my PS-2, I have worked in the Robotics Process Automation (RPA) team. Basically RPA team works on automating processes using Automation Anywhere (AA) tool so that FTE's working on these processes can be saved. I worked on some of the processes in Financial Services Trades and other processes like MTM and its backend process. In FS (Financial Services) Trades, I have worked on RR check, LME check, Hash formula, Cross currency check.

Tools used (Development tools - H/w, S/w): Software tool called- Automation Anywhere (AA).

Objectives of the project: Objective of the project is to save the FTE's (Full Time Employee) by automating the processes which are feasible to automate.

Outcomes of the project: The processes which I have worked on are tested by the supervisors of our project in JPMC. They gave us all possible test samples to test our code. The major outcome of the project is that to we could save approximately 4 FTE's (Full Time Employee).

Major Learning Outcomes: Myself being a non computer sciences person, I could able to learn few things about the computer programming. I have learnt a software tool called Automation Anywhere. I have realised how important is technology these days by seeing the people over here and kind of scope it has in the future.

Brief Description of working environment, expectations from the company: Working at JPMC Bangalore I would say is a great experience for me. The work culture over here is amazing. The co - workers in JPMC are very cordial and polite and always willing to help others. Even the work allotmentand their respective deadlines are reasonably set by the managers. Lastly, I would like to say that everything's great in JPMC only if you like to work.

Name: Aishwarya Sai Praturi (2013AAPS027H)

Student Write-up

Shot Summary of work done during PS-II: JPMorgan Chase & Co.is an American multinational banking and financial services holding company headquartered in New York City. It is the largest bank in the United States and the world's third largest bank by total assets.The PS station is a back-office process oriented station.I worked in the RPA team under the sub-segment of Corporate and Investment Banking segment of JPMorgan. My work was related to automating certain processes done by the operations teams in the bank using automation software and do the POC of another Automation Software. RPA does not require programming skills.Process definitions are created graphically by dragging, dropping and linking icons that represent steps in a process.

Tools used (Development tools - H/w, S/w): Automation Anywhere WIN Automation.

Objectives of the project: To automate certain manual processes done in the banking system and do the POC of another automation software.

Outcomes of the project: Certain manual processes done by the operations team in the bank were automated and the advantages and disadvantages of using one automation software as compared to another were analyzed and reported on.

Major Learning Outcomes: The PS experience has trained me immensely in the skill set, attitude and the dedication required to work in corporate life. It has also widened my knowledge base and awareness of the work done in Investment Bank.

Brief Description of working environment, expectations from the company: Work life balance can be challenging at busy times. I've had to work for extremely long hours when working on certain projects.Employees are friendly and approachable.

Name: Pathapati Abhishek (2013A4PS209H)

Student Write-up

Shot Summary of work done during PS-II: Automating manual processes. Manual processes such as creating a request, checks which are easy and require no real human decision making.

Tools used (Development tools - H/w, S/w): proprietary third party automation software.

Objectives of the project: Automating manual processes.

Outcomes of the project: Automated manual processes.

Major Learning Outcomes: Learned how automation works and gained some insight on how the business processes works.

Brief Description of working environment, expectations from the company: The work environment was not so good but it was ok. We were given work and expected to complete it quickly. There was no proper planning done whether a process can be automated or not and whether it was worth automating. The tool given to us was not so reliable for these manual processes. Most of the code written by us used to fail because the features in the tool were unreliable.So better tools should have been given to us. I expected to apply the financial concepts that I learned in college or learn new financial concepts but that wasn't case at all. But I learned how JPMC Bangalore office functions and what it does daily.

Name: Prakhar Vidyarthi (2013A3PS205G)

Student Write-up

Shot Summary of work done during PS-II: The work was to automate certain processes of the Operations team of the bank. Used software to achieve the objectives and worked with a number of web and mainframe applications.

Objectives of the project: The objective of the project was to replace certain repetitive tasks being done by Full Time Employees with bots, who complete the same tasks with high precision and take less time to do so. Automation software was used for the task, and several key processes were automated.

Outcomes of the project: Many processes were successfully automated, and work is being done on the others. The time required to complete said processes is a fraction of the earlier duration when it was handled by humans.

Major Learning Outcomes: Learned a lot about the functioning of a bank's back office and its vitality in the whole operation of a major bank. Gained knowledge about the automation software and used it in different projects.

Brief Description of working environment, expectations from the company: The working environment can be quite hectic, with difficult deadlines and long hours. You will directly be in touch with senior employees, and can learn a lot from them. Not a lot of things to learn here, and after some time, the work will cease to be challenging.

Name: Akriti Gupta (2013A3PS354H)

Student Write-up

Shot Summary of work done during PS-II: Doing BAU with USSO Income Bangalore, Automation of wire repository and development of macros to automate the tasks on the mainframe.

Tools used (Development tools - H/w, S/w): Excel, JPMC Mainframe and Visual Basic.

Objectives of the project: To automate the assignment and applying of wires from the JPMC wire repository.

Outcomes of the project: Preparation of the BRD.

Major Learning Outcomes: VBA, Excel skills, tasks in the income team.

Brief Description of working environment, expectations from the company: Highly organized, big company. System of checks and balances. Working hours are considered important and show your level of sincerity.

Name: Prabu Kalidoss (2015H149240P)

Student Write-up

Shot Summary of work done during PS-II: Daily P&L report calculation for various funds for Boston clients. Investment vehicle - Fund of Hedge Funds.

Tools used (Development tools - H/w, S/w): Geneva, TLM, and Excel.

Objectives of the project: Daily operations.

Outcomes of the project: Performing day to day tasks.

Major Learning Outcomes: Calculation of GAV, NAV, P&L.

Brief Description of working environment, expectations from the company: Friendly, accommodative, Receptive and Challenging.

Name: Shreya Chandra (2012B1A3733G)

Student Write-up

Shot Summary of work done during PS-II: Worked on automation anywhere tool to automate their processes, worked with excel sheet to map data onto their tool, Xceptor.

Tools used (Development tools - H/w, S/w): Excel, automation anywhere.

Objectives of the project: Automate their processes.

Outcomes of the project: Process was automated.

Major Learning Outcomes: Excel, automation anywhere tools.

Brief Description of working environment, expectations from the company: Too much work pressure, not much of a learning curve, managers here expect too much work from you, but you get an exposure of working at a big firm like JPMC.

Name: Shrirang Mundada (2012B2A3718H)

Student Write-up

Shot Summary of work done during PS-II: We worked on trade capture automation process for Custody and Fund Services division at JP Morgan to eliminate manual intervention and improve efficiency.

Tools used (Development tools - H/w, S/w): Xceptor, Excel.

Objectives of the project: Automate manual touch points using technology.

Outcomes of the project: Save effort of about 100 Full time employees.

Major Learning Outcomes: Understand the culture and expectations at Financial Institutions. Deal with pressure and work in intense environment.

Brief Description of working environment, expectations from the company: JP Morgan takes interns for work on projects which are not part of day to day business and treats everyone like a contractual employee. Most interns here worked long hours (min 9hrs) on essentially monotonous work without any grooming from career perspective. Most worked on technologies that are not widely used outside JP Morgan and no finance related projects are there. Opt this PS for getting a brand name on resume or to get a taste of financial back office operations in India. Expect no objective learnings.

Name: Sharadind Peddiraju (2013AAPS305H)

Student Write-up

Shot Summary of work done during PS-II: Robotic Process Automation create a logic to automate banking operations.

Tools used (Development tools - H/w, S/w): Automation anywhere.

Objectives of the project: Automate banking operations.

Outcomes of the project: Value creation by reducing working staff in operation by 40% and replacing these positions by bots.

Major Learning Outcomes: Except for learning to use software where drag and drop of functionalities covers major part of so called scripting, learning outcomes through your assigned project will be highly limited. But working in a massive MNC as JPMC will definitely hone your ideologies towards organizational behavior and communication skills. One of the biggest opportunities the PS provides you with is networking. This will be the only area where you can leave a mark. Rest is the flow of the current. Most importantly, welcome to a world were saying "No" is as valuable as delivering efficiency.

Brief Description of working environment, expectations from the company: The Company expects interns to work along full time employees and meet harsh and obviously unreachable deadlines. Forget having a life out of office, goodbye weekends. When asked, get ready to clock in more than 14hrs a day.

Name: Samriddhi Saxena (2014H313065H)

Student Write-up

Shot Summary of work done during PS-II: I was there in the technology team. My project was to automate there clerical work. I was introduced to new tools.

Tools used (Development tools - H/w, S/w): Automation Anywhere.

Objectives of the project: To reduce the manpower doing clerical work

Outcomes of the project: I was successfully able to deliver the project on time.

Major Learning Outcomes: There was no scope of learning.

Brief Description of working environment, expectations from the company: The working environment is really bad. There is no defined culture and till the end of our internship we were not give desks or a proper workspace where we can work comfortably. There were meaningless deadlines which can't be met. I would suggest to go anywhere except JPMC.

Name: Lavina Tekwani (2015H112176P)

Student Write-up

Shot Summary of work done during PS-II: In this we tried to automate the lot of manual work done by employees which is recurring and in same fashion using Automation anywhere tool.

Tools used (Development tools - H/w, S/w): Automation Anywhere tool.

Objectives of the project: Robotics Process Automation.

Outcomes of the project: Software bots were trained to perform the task in the same fashion as done by manually.

Major Learning Outcomes: Nothing as such but able to follow the process explained.

Details of papers/patents: No paper as such.

Brief Description of working environment, expectations from the company: The working hours are nearly 9hrs per day and even more than that. They may ask to come on weekends. The tool itself is so unreliable sometimes it performs correctly and in some cases few of the commands fails in Automation Anywhere.It’s a request not to opt for robotics project.

Name: Anubhav Saksena (2015H149273P)

Student Write-up

Shot Summary of work done during PS-II: I have been involved in preparation of solution document for the Custody Project. Besides this, I was also involved in working with the operations team to understand the business requirements from the Robotics perspective. I also worked on developing scripts on Robotics platform for automation of various processes as part of the project.

Tools used (Development tools - H/w, S/w): AUTOMATION ANYWHERE ENTERPRISE.

Objectives of the project: To achieve greater efficiency and better utilization of skills, efforts and time of operational personnel.

Outcomes of the project: Improved operational efficiency and FTE savings.

Major Learning Outcomes: Organization Culture and Work Environment, Learning about RPA Technology, platform and tools.

Brief Description of working environment, expectations from the company: Working environment is good but there can be work pressure when we are working under tight deadlines.Overall a good learning experience. I expect that the Robotics project will be more organized and planned in the years to come.

Name: Sanket Dey (2013A1PS612P)

Student Write-up

Shot Summary of work done during PS-II: Automating Tasks that are routine in nature as well as rule based using automation software to ensure accuracy as well as speed.The project also aims at saving valuable employee time (FTE) so that the resources are better deployed towards processes that require decision making. Our assignment was to automate processes that involve basic downloading of financial and accounting reports such as Profit and Loss Reports, Purchases and Sales Reports etc. We were assigned to create bots that when triggered takes inputs from a file shared across regions of the bank

and use the input to generate relevant outputs that can be used in the day to day functioning of the firm.

Tools used (Development tools - H/w, S/w): Automation Software, Excel VBA, Database (Access).

Objectives of the project: To automate rule based processes to ensure accuracy of routine processes through automation To save FTE using automated bots.

Outcomes of the project: The automation was successfully done and the bots were run on a daily basis which helped the company save valuable employee time and energy while maintaining accuracy.

Major Learning Outcomes: Organization Structure Creating Bots to automate rule based processes Scope of Automation and Implementation in Financial Services Functioning of the Organization.

Brief Description of working environment, expectations from the company: The work environment is a confused one with lack of recourses being a big issue. Learning opportunities are limited after the first month. One is expected to handle a lot of responsibilities as there is a deficiency of man-power.

Name: Vishal Annamaneni (2012B4A2824H)

Student Write-up

Shot Summary of work done during PS-II: The Assignment was to automate processes that involve basic downloading of financial and accounting reports such as Profit and Loss Reports, Purchases and Sales Reports etc. This meant creating bots that, when triggered, takes inputs from a file shared across regions of the bank and use the input to generate relevant outputs that can be used in the day to day functioning of the firm.

Tools used (Development tools - H/w, S/w): Automation Anywhere, VBA Macros, SQL and Database, XML.

Objectives of the project: Automating the Daily Accounting Reports Downloading Processes in Hedge Funds Department.

Outcomes of the project: Daily Accounting Reports Processing and Reconciliation are performed by BOTS.

Major Learning Outcomes: Creating Bots to automate rule based processes, Scope of Automation and Implementation in Financial Services and Functioning of the Organisation.

Brief Description of working environment, expectations from the company: The work-life balance is really off. The company expects you to perform no less than how a Full Time Employee does.

Name: Surya Narayana Pabbisetty (2013A4PS317H)

Student Write-up

Shot Summary of work done during PS-II: Automation of rule based tasks that don't require much decision making skills.Things that require no manual effort whatsoever.

Tools used (Development tools - H/w, S/w): Automation Anywhere, VB and Macros, Excel, Database, SQL.

Objectives of the project: Automation of tasks.

Outcomes of the project: Created note to download reports from proprietary software with inputs from the team that triggers it.

Major Learning Outcomes: Learnt automation software and some basic VB, Macro, SQL.

Brief Description of working environment, expectations from the company: Work culture is good. But work life balance is null. It is so bad to make an intern accountable for small things.Expecting people to come on weekends, Lot of work pressure which in long run might disturb health and cause psychological issues.

Name: G Sandeep Reddy (2013A2PS531H)

Student Write-up

Shot Summary of work done during PS-II: Made few processes RPA ready by preparing requires mapping files and other files. Prepared scripting ready BRD's for few processes without missing any logical step required. Worked on charter files and prepared charter file repository for ROU department. Maintained and followed up access tracker for various teams' applications. Engaged with the stakeholders to explain Robotics ask and identify opportunity for Robotics.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: To reengineer and simplify the processes by looking at the processes systems more holistically. To make processes RPA ready by putting all the mapping files and other required formats ready. To prepare scripting ready BRD's without missing any logical step. To engage with the stakeholders to explain Robotics ask and identify opportunity for Robotics.

Outcomes of the project: Made few processes RPA ready by preparing the required mapping files and other files. Prepared scripting ready BRD's for few processes without missing any logical step required. Worked on charter files and prepared charter file repository for ROU department. Maintained and followed up access tracker for various teams' applications.

Major Learning Outcomes: Learnt how to use Excel.Preparing scripting ready BRD's. Interacting and organizing meetings with various team leads to understand their process at a high level. Learnt how to approach and prepare a solution for automation.

Brief Description of working environment, expectations from the company: The work environment was very helpful and friendly. People over here are very talented and also helpful and very down to earth. Moreover my manager was pretty helpful and she was always there to encourage and guide me when i needed.

Name: Gopal Betdur (2015H103092P)

Student Write-up

Shot Summary of work done during PS-II: In these five months my internship in JP Morgan Chase I have worked on Robotics Process Automation (RPA) project. RPA basically involves the automation of the

work which the employees do manually. This involves automation of Web, Mainframe and Standalone application. We used tools such as Automation Anywhere and Win Automation for automating these applications. These tools have commands for reading data from excel sheets, web forms and Mainframe applications, this has got commands for string operations such as concatenation, split etc. Daily phone calls with clients helped me improve my communication skills. Overall it was a good experience working with JPMorgan Chase.

Tools used (Development tools - H/w, S/w): Automation Anywhere, Win Automation

Objectives of the project: Automate the manual work done by the employees.

Outcomes of the project: Learnt new tools.

Major Learning Outcomes: Communication skills got improved.

Brief Description of working environment, expectations from the company: Working environment is good but there few loopholes, before the start of the project they didn't give proper training to interns, many interns were from non coding background so the outcome was not the efficient. They set very unrealistic deadline for the project without even asking the developer whether the work can be done within the deadline or not. If a developer is stuck somewhere they immediately they'll give him some other project and someone else will be put into this project hence the quality of the code gets degraded. I enjoyed working for JPMorgan Chase and will continue to work if I get a chance from them.

Name: Shiv Kant goel (2015H149243P)

Student Write-up

Shot Summary of work done during PS-II: I Worked on automating the trade capturing process using xceptor data hub so as to facilitate the process.

Tools used (Development tools - H/w, S/w): Xceptor.

Objectives of the project: To reduce the number of FTE'S by automating the routine jobs.

Outcomes of the project: Still in progress.

Major Learning Outcomes: Xceptor tool and corporate ethics.

Brief Description of working environment, expectations from the company: The working environment was very nice but the work that was allocated **was** in not in line with my expectations.

PS-II Station: J.P. Morgan Chase, Mumbai

Student

Name: Aditya Ray (2015H103093P)

Student Write-up

Short Summary of work done during PS-II: Robotic Process Automation (RPA) -- Automating manual tasks. This involved automating various business processes like Collateral Email Management, Managing Trade Information and Data Collation for Client Interactions. This would involve various web based and desktop applications.

Tools used (Development tools - H/w, S/w): AutomationAnywhere, VBA, EXCEL, OUTLOOK, VBS, JavaScript, Python, JAVA, EMBER JS, Mainframes (TSS- Trading Support System).

Objectives of the project: 1.Collateral Email Management - Part 1- Auto-Tagging/Moving of emails based on email to CSR mapping files. Part 2- Auto generation of emails based on data downloaded from business object and other mapping files and sending them to Maker/Checker queue.2.Overdraft--- Downloading the overdraft information from email attachments, combine their data(after per-processing) and updating the information to a master file that is supposed to be uploaded to the share-point for further investigations. 3.Data Collation for Client Interactions-- Collecting Trade Information(Swift and paper) from various systems involving mainframes, web-applications, desktop applications and updating the relevant information to master files,shared drives,web applications etc.

Outcomes of the project: All the manual tasks were automated which lead to about 3 FTE saves per objectives.

Major Learning Outcomes: 1.How to deal with real-life problems which have immediate impacts on business processes. 2. How to deal with various teams -- Business, Operations, other COE, OCM and Compliance. These people may or may not have technical background. 3. Learn to appreciate standard business models and frameworks.

Brief Description of working environment, expectations from the company: Very healthy working environment. You can go up to anyone and talk about the issues you are facing. Everyone is helpful and if someone is not able to solve your problem,

He/she would direct you to the person who can. The expectations involve -- updating everyone in the team about your progress/issues related to the current work assignment. --- complete the tasks within deadlines. --- communicate to respective teams regarding various issues. Access, entitlements, ITSM related, infrastructure related… there are different teams for all these.

Name: Amit Kesarkar (2015H149287P)

Student Write-up

Short Summary of work done during PS-II: Scripting.

Tools used (Development tools - H/w, S/w): Automation anywhere.

Objectives of the project: Reduce the operation cost and improve efficiency.

Outcomes of the project: Automated process of 6 FTE.

Major Learning Outcomes: Client interaction.

Brief Description of working environment, expectations from the company: Project should be aligned with academic background. Company should not give scripting (tech) work to MBA students.

Name: S Krishnan (2015H149241P)

Student Write-up

Short Summary of work done during PS-II: Was coding for the robotics team Clear mismatch between the course studied and the role offered by PS station. Had realized concern in the beginning, but had to continue as no action was taken.

Tools used (Development tools - H/w, S/w): Automation anywhere, vba.

Objectives of the project: Robotics automation.

Outcomes of the project: Learnt coding and automation.Nothing much about the bank operations due to compliance and company policies.

Major Learning Outcomes: Time management, IT industry working and culture.Delivered 15 Full Time Employee saves.

Brief Description of working environment, expectations from the company: As MBA interns we had raised the issue that the PS station was offering roles of coding that required engineers. We were made to work as engineers on the false hope given by managers that projects change or a suitable offer while providing PPO.But neither happened. PPO was offered for the role of a scripter and we were explicitly told that the companies do not value our MBA degree. We faced a non supportive environment which just used us as just resources.

Name: Utkarsh Tiwari (2012B3A1414G)

Student Write-up

Short Summary of work done during PS-II: Automation of operation processes with the help of an API software, VBScripts and SQL.

Objectives of the project: Automate processes.

Outcomes of the project: Saved the work of several full time employees by automating the repetitive and mundane tasks that don't require cognitive thinking.

Major Learning Outcomes: Well versed in VB scripts, SQL and in dealing with ops team for designing process flow.

Brief Description of working environment, expectations from the company: The work environment is highly competitive with interns clocking in at least 10 hours a day. Employees are helpful although the managers might push you more than you can handle.

Name: Shailesh Upadhyay (2012B3A8567G)

Student Write-up

Short Summary of work done during PS-II: Worked as a business analyst for Robotics team in JP Morgan Chase.Work was basically designing process for automation and making them efficient and secure.

Objectives of the project: Automation of manual mundane processes.

Outcomes of the project: Company has saved a lot of money by replacing full time employee by BOTS, moving people into more creative roles.

Major Learning Outcomes: Communication skills, Robotics analyst.

Brief Description of working environment, expectations from the company: Work hours may vary from 9-12 hours a day.Interns in the scripting role may get called on Saturdays.Services provided by the company are good.Most of the interns were assigned to Robotics team which is technology, while everyone expected finance based on the projects.PS2 details for the PS station should include the type of project to be assigned and should include that this is a tech PS station and not a finance one.

Name: Aakash Rathi (2015H149266P)

Student Write-up

Short Summary of work done during PS-II: My work is to make coordination with operation team and automate their process with the help of tools such as Automation Anywhere.

Objectives of the project: Objective is to automate a particular process.

Outcomes of the project: With the help of this project we help employee to not to do same repetitive work again and again.

Major Learning Outcomes: I understand their process flow and main learning was how to manage people as making coordination between operation team and tech team is big challenge.

Brief Description of working environment, expectations from the company: Positive work environment, higher management hears your voice.

Name: Himanshu Mishra (2015H149235P)

Student Write-up

Short Summary of work done during PS-II: Process automation of 2 processes I.e. Finer and CRS using automation tool Automation Anywhere and VBAs.With help of this I reduced 7 Full time employees. Applied my logical thinking and creativity but not what I studied in college.

Tools used (Development tools - H/w, S/w): Automation Anywhere and VBAs.

Objectives of the project: To reduce full time employee by automation.

Outcomes of the project: Atomized process which is mundane in nature.

Major Learning Outcomes: Certain Operational process and coding.

Brief Description of working environment, expectations from the company: JPMC has a very good working environment and support from my colleagues has helped me to deliver projects. Thank you BITS Pilani for giving me an opportunity to work with JPMC but my project was irrelevant to my courses and it was a hammer on my expectations of getting a PPO. I managed everything, learnt coding in this time period and delivered project.

Name: Yash Bhargava (2013A1PS523G)

Student Write-up

Short Summary of work done during PS-II: Operations work, a bit monotonous but the surrounding people make it a fun experience, company requires a sharp and innovative mind.

Tools used (Development tools - H/w, S/w): Excel, Qlikview and SQL.

Objectives of the project: Efficiency Generation.

Outcomes of the project: 0.4-0.5 FTE (Full Time Employee Save), Trade Life Cycle Analysis.

Major Learning Outcomes: Qlikview and SQL.

Brief Description of working environment, expectations from the company: Operations work, a bit monotonous but the surrounding people make it a fun experience, company requires a sharp and innovative mind.

Name: Vinay Chillara (2013A4PS233P)

Student Write-up

Short Summary of work done during PS-II: Process automation and data management using a certain tool. In one word, coding.

Tools used (Development tools - H/w, S/w): Not at liberty to disclose.

Objectives of the project: Reduce cost for the company and increase process efficiency by automating manual tasks.

Outcomes of the project: Cost reduction for the company and increase in process efficiency.

Major Learning Outcomes: Learnt to use the tool, working with deadlines, general organizational hierarchy and work flow, teamwork.

Brief Description of working environment, expectations from the company: Relaxed working environment with flexible working hours. Dedicated teammates who ensure you feel at home. Interesting and well established work culture; frequent talks held by senior management to ensure involvement of employees at all levels.

Name: Jaipal S Rathore (2012B3A1706G)

Student Write-up

Short Summary of work done during PS-II: I have worked extensively on automation projects which involve good knowledge of VB and one internal tool.

Objectives of the project: 1.Increase operational efficiency. 2. Time saving 3.Reduced chances of manual error.

Outcomes of the project: 1.Increase operational efficiency. 2. Time saving 3.Reduced chances of manual error.

Major Learning Outcomes: 1.Projects helped me to work across various team.2.Helped me to develop my time management and professional skills 3.Helped me to improve my presentation skills, technical skills.

Brief Description of working environment, expectations from the company: Working environment in J.P Morgan Chase are friendly and helping. The work expectations from the company depends on kind of team allotted and projects with the team.

Name: Shivam Gupta (2015H149242P)

Student Write-up

Short Summary of work done during PS-II: Investment Compliance.

Tools used (Development tools - H/w, S/w): Bloomberg, MS office.

Objectives of the project: Compliance check up for US markets.

Outcomes of the project: Keeping investments in track.

Major Learning Outcomes: Investment criteria.

Brief Description of working environment, expectations from the company: All was good except the nature of work given to MBA graduates. The work should be based on what we learned in college not upon what company premeditated for us.

Name: Shubham Rathi (2013ABPS697P)

Student Write-up

Short Summary of work done during PS-II: I was the part of Robotics department of JPMC, Mumbai. The work here is primarily scripting and coding related which is apt for the people interested in the IT industry. Initially, I was not very interested in it but with time both interest and expertise developed. The work generally is automating the operational processes done by the operations team manually both onshore and offshore.

Tools used (Development tools - H/w, S/w): Automation Anywhere, Xceptor, VBA, Python, and Excel.

Objectives of the project: Robotics Process Automation.

Outcomes of the project: Automated various operational processes for the operations team.

Major Learning Outcomes: Automation Anywhere, Xceptor, VBA, Python, Excel.

Brief Description of working environment, expectations from the company: This was the first exposure to a corporate environment for me. The focus on delivering on time is the most. Work Pressure is high during end of each quarter, otherwise decent. They also provide other benefits like transportation and food which are an added plus and make it easier to commute in a city like Mumbai. The overall experience has been good**.**

Name: Rizwan Ansari (2015H149276P)

Student Write-up

Short Summary of work done during PS-II: I was part of an entirely different project and team as compared to others at JPMorgan. I was working in Rates EMEA/NA team at Mumbai Middle Office, wherein the work majorly comprises of reaffixing the interest rates to respective trades. There is a lot of work pressure and one needs to adhere to lot of deadlines and you have a lot riding on any work an employee does. During the initial days, I was assigned a list of 10-12 fixing issues with regards to various desks (Sydney, Tokyo, EMEA, GEM, etc) and financial products for which i had t provide suggestions and improve the overall system. I was also involved with a cross functional team in Swap Data Repository (Dodd Frank) or trade bookings. At times I had to chase a lot of people with regards to work assigned to me. Also, I helped the team with regular BAU work, QA/QC, drafting SOPs, making macros to increase

the efficiency of processes. There was tremendous amount of pressure working in a Middle Office set up especially considering one need to regularly keep in touch with London Middle Office guys. I had to learn a lot of things at a fast pace and the people in middle office expect you to grab things at one go. Overall it was a decent experience wherein I had a lot of Operations work all related to Finance. I learnt a lot of things which you never find out in finance books. One should definitely go for this rather than Automation at JPMorgan if he/she has an inclination towards Finance/Operations.

Tools used (Development tools - H/w, S/w): Excel, In house applications.

Objectives of the project: To eradicate the refixing issues faced by the team, improve process, provide an input in SDR and other BAU works.

Outcomes of the project: Successfully managed to remove fixing issues for Tokyo Swaps, Tokyo Flow and Sydeny Swaps. Also, helped the firm book a lot of trades on a daily basis, improve the efficiency of process.

Major Learning Outcomes: It helped me a great deal in understanding the nuances of ways in which a middle office works.

Brief Description of working environment, expectations from the company: The Middle Office setup is something where one needs to put in long working hours and should multi task on a lot of work simultaneously. The team would expect you to grab things at a very fast pace. Overall the work environment was satisfactory.

Name: Nandedkar Amey Vivekrao (2012B3A8478G)

Student Write-up

Short Summary of work done during PS-II: Basically involved in project management team as intermediary between tech and ops team. We were involved in basic automation of certain processes using certain proprietary software. I also did some UAT testing for some new processes.

Tools used (Development tools - H/w, S/w): Excel, Sql.

Objectives of the project: UAT testing of CFD in order to minimize scope of error.

Outcomes of the project: The project was successfully completed and I received sign off from both ops and tech team.

Major Learning Outcomes: Fund accounting, derivative pricing, Excel.

Brief Description of working environment, expectations from the company: JPMC has very open policy and we can easily reach out to seniors. Shifts can be unusual, in my case 1.30 to 10.30. However, company provides free cab.

Name: Dev M. Karthik (2013ABPS890H)

Student Write-up

Short Summary of work done during PS-II: Work done on Automation anywhere which is software used for Automation.

Tools used (Development tools - H/w, S/w): Automation anywhere, VB script, Excel.

Objectives of the project: To automate sweeps and other processes.

Outcomes of the project: Monetary gains as Bot help reduce FTE (Full time employees).

Major Learning Outcomes: RPA -Robotic process automation.

Brief Description of working environment, expectations from the company: It is a very good place to be. Awesome work and operations team is very good. The Robotics team is a place where you can learn new skills which will help in getting you a good job.

Name: Gaurav Gupta (2013A8PS679G)

Student Write-up

Short Summary of work done during PS-II: J.P. Morgan Chase & Co. is a U.S. multinational banking and financial services holding company, with its headquarters in New York City. It is the largest bank in the United States, the world's third largest bank by total assets, with total assets of roughly US$2.5 trillion, and the world's most valuable bank by market capitalization. It is a major provider of financial services and according to Forbes magazine is the world's sixth largest public company based upon a composite ranking. The hedge fund unit of JPMorgan Chase is the second largest hedge fund in the United States. The company was formed in 2000, when Chase Manhattan Corporation merged with J.P. Morgan & Co. I have been working with the Process Excellence team in Cash Operations Line of Business (LoB) as an intern. The last few decades have seen companies adopt a whole bunch of different methods for improving the quality and efficiency of their output: Total Quality Management, Business Process Reengineering, Lean, Six Sigma, Business Process Management, Business Performance Improvement, and many more. What all these methodologies have in common is a focus on process – an activity through which something - whether tangible or intangible - is transformed into something else. At its most fundamental level, process excellence is not about a methodology, it is about improving the way that businesses create and deliver value to their customers, and this is exactly what J.P. Morgan aims at; Customer Satisfaction.

Tools used (Development tools - H/w, S/w): Outlook, Access, Sharepoint, QlikView and Tableau.

Objectives of the project: Operations Management.

Outcomes of the project: Learnt a lot about Management and Operations.

Major Learning Outcomes: Outlook, Access, SharePoint, Qlikview, Tableau, Management.

Brief Description of working environment, expectations from the company: J.P. Morgan Chase & Co. is a U.S. multinational banking and financial services holding company, with its headquarters in New York City. It is the largest bank in the United States, the world's third largest bank by total assets, with total assets of roughly US$2.5 trillion, and the world's most valuable bank by market capitalization. It is a major provider of financial services and according to Forbes magazine is the world's sixth largest public company based upon a composite ranking. The hedge fund unit of JPMorgan Chase is the second largest hedge fund in the United States. The company was formed in 2000, when Chase Manhattan Corporation merged with J.P. Morgan & Co

Name: Nitish Shukla (2015H149269P)

Student Write-up

Short Summary of work done during PS-II: I worked in the Robotics Process Automation division of JPMC in the Corporate and Investment Banking Line of Business. I was responsible for automating the repetitive operational tasks so that the time of the operations team can be better utilized. Robotic Process Automation (RPA) is the automation of processes using technology and involves the use of software robots that are easy to configure, require little IT expertise and can be quickly trained and deployed to automate manual tasks. They differ from traditional software by working at the user interface level, replicating the exact actions a human user would take and creating, in effect, a virtual BPO.

Tools used (Development tools - H/w, S/w): Automation Anywhere, Microsoft Excel and HP Service Manager.

Objectives of the project: To automate the repetitive operational tasks so that the time of the operations team can be better utilized.

Outcomes of the project: Working environment was no different from an MNC. Being one of the largest investment banks in the world I did not get the feel of working in the finance industry since I was put into the technical role. The team I worked with was supportive and the mentor taught me a lot of things ranging from technical to personal traits. It was fun working in such an environment with world class infrastructure and state of the art technology.

Major Learning Outcomes: Successfully saved 4 FTEs worth of human effort.

Details of papers/patents: Successfully saved 4 FTEs worth of human effort.

Brief Description of working environment, expectations from the company: Decision making, negotiation techniques, delivering the deliverables on time.

Name: Anvisha Singh (2013D2PS984P)

Student Write-up

Short Summary of work done during PS-II: I was a part of Operations department at JP Morgan. The work was regarding managing current projects running in robotics wing. The secondary part of the work was to understand different daily or weekly processes taking place in the team and coming up with ways to make them efficient.

Tools used (Development tools - H/w, S/w): MS Macro, Qlikview, and Xceptor.

Objectives of the project: Making the weekly process less time consuming and efficient.

Outcomes of the project: The working environment is fine. You are expected to know the basics of Excel. The timings are quite flexible and people at the firm arw willing to help one in need.

Details of papers/patents: Saved around 16 hours per month for the team by automating a major process.

Brief Description of working environment, expectations from the company: VBA, analysis tool call Qlikview and managing different teams**.**

Name: JAYAM DHARANI KRISHNA (2013A4PS358P)

Student Write-up

Short Summary of work done during PS-II: Main work was involved with publishing dashboard reports for the Trade Finance department. This work required collation of data from various sources, and refreshing this data into a meaningful form which would further be used by other Operations folks.The work also required to automate this entire process using VBA for Microsoft Excel. The reports would be scheduled using an automated BOT which would compile the data and also publish it to the Dashboard.

Tools used (Development tools - H/w, S/w): Microsoft Excel.

Objectives of the project: To publish the newly generated reports at regular intervals and to automate the entire process completely using a BOT.

Outcomes of the project: The publishing of the required reports would be done automatically without any human intervention with minimal errors and at a lesser cost with increased efficiency.

Major Learning Outcomes: Completely understand the functionalities of Microsoft Excel, and how the Office tools could be used effectively for the different tasks.

Brief Description of working environment, expectations from the company: There are no fixed working hours as such. You are expected to complete the tasks for your day and it would generally be for 9 to 10 hours. Working environment would be fine but it would take some time to adjust to it. You are given full freedom to consult and contact the required authorities to understand and complete the tasks.

Name: Sanjay Reddy S (2013A7PS189P)

Student Write-up

Short Summary of work done during PS-II: Member of the Global Tech Center responsible for automating Banking operations through Automation Anywhere. Also responsible for gathering client requirement, assigning resources for tech team, projects troubleshooting and delivery status maintenance.

Tools used (Development tools - H/w, S/w): Automation anywhere.

Objectives of the project: Process automation.

Outcomes of the project: Two projects live, one in development phase.

Major learning outcomes: Process flow understanding & information gathering.

Brief Description of working environment, expectations from the company: Work Environment: Conducive.

Expectation: Work allocation should be as per student's academic domain & skillset, which's not there.

PS-II Station: J.P. Morgan Services India Pvt. Ltd, Mumbai

Student

Name: Palash Singhal (2012B3A3634H)

Student Write-up

Short Summary of work done during PS-II: I am working in the Global Research Center of JPMorgan. At this department, we perform research on different asset classes, be it equities, bonds, derivatives as well as conduct strategy based research. I am a part of the US Healthcare IT division conducting equity research on eight different companies under my coverage. We create an update company models on excel, perform valuation as well as forecasting exercises and give our recommendation. In my division, we use relative valuation approach to arrive at out valuation. A major part of our work also consists of writing and publishing research reports. The research reports consists of our recommendations, any events or any major developments in the company our sector in our coverage. It has been a very good experience and one which I would recommend to anyone interested in finance.

Tools used (Development tools - H/w, S/w): MS Excel, MS Word, MS PowerPoint, and Bloomberg.

Objectives of the project: Perform Equity Research on companies in our coverage.

Outcomes of the project: Results in Valuation of stocks recommended by JPMorgan and published in our research reports.

Major Learning Outcomes: Learnt the process of equity research and valuation, learnt to use MS Excel in detail with a week's training, exposed to tools like Bloomberg.

Brief Description of working environment, expectations from the company: A very friendly and positive working environment. People are ready to help each other out. Questions are encouraged by the senior management. Earnings time is a very hectic time but it also is a time when one gets to know the most about the companies and their functioning. We get to listen to company earnings calls as well as the questions asked by covering analysts representing different companies in the equity research space. There is no difference between an employee and an intern in terms of work or the treatment within the organization.

Name: Srujan Reddy Yara (2013A1PS469P)

Student Write-up

Short Summary of work done during PS-II: I was given a chance to intern with the most elite teams on the floor, i.e., the Quantitative Research (QR) team. As the name suggests, my work is related to financial modeling, developing new parameters to capture risk. All of the work is accomplished using Python as the language of choice. We develop client-based commodity indices, code it up in Python and maintain throughout its' life-cycle. Our team is heading towards incorporating Machine Learning, and new risk framework. This is a proper fin-tech role.

Tools used (Development tools - H/w, S/w): Python, Visual Studio, and Financial modeling skills related to index.

Objectives of the project: 1. Develop and maintain client based indices is the main business. 2. It is not a single project which I did. I worked on multiple projects which range from app-building, to maintaining commodity indices.

Outcomes of the project: I have learnt the ins-and-outs of index building, its' underlying strategies and also the disruption handling techniques. I have also enhanced my coding skill which is surely needed in the present days.

Major Learning Outcomes: 1. Index building and maintenance 2.App building using Python 3. A ton of soft skills.

Brief Description of working environment, expectations from the company: The team is setup recently and most of the colleagues are of my age, so it's been very easy for me to approach anyone and clarify my doubts. My team is directly aligned with the London team and they treated me very well too. I was never given a simple task or side-work which probably an intern would do. I was always given main-stream work and treated me just like any other full-time employee. The bi-weekly TP meetings which we have with our on-shore team at London, surely boosts the exposure and confidence. All-in-all, the work environment is charming, yet demanding at the same time. The team spirit is also very good and you have the liberty to talk to anyone and clarify your issues. They are very much willing to help you tackle any situation in case you are stuck.

Name: Nirali Kansara (2012C7A1841P)

Student Write-up

Short Summary of work done during PS-II: I am involved in Index Structuring team of the Global Markets Group. We report to the Hong Kong office as a part of the Asia Pacific region. We create and maintain JP Morgan proprietary indices on which our clients trade. We are also involved in pricing these structured products.

Tools used (Development tools - H/w, S/w): Python, Excel.

Objectives of the project: The objective is to structure indices and maintain them.These is for our clients sitting out of Asia Pacific and at times other regions to trade.

Outcomes of the project: The work has given me very good insight into how Markets work. It has also given us very good exposure as to how trading happens and how live and indicative pricing works.

Major Learning Outcomes: I feel that the courses Derivatives and Risk Management and a Financial Engineering have been very useful. The work has bridged the gap between my theoretical knowledge and practical application of the same.

Brief Description of working environment, expectations from the company: The working environment is very good, partially because most of the employee in our division is in the age group of 26-30 and hence it becomes very easy to connect with them. They are patient and very encouraging.

Name: Ishita Deshmukh (2012B3AA863H)

Student Write-up

Short Summary of work done during PS-II: The work pertains to equity research.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: To arrive at a rating and price target for various companies.

Outcomes of the project: Used fundamental analysis and valuation techniques to arrive at price targets and ratings for companies in various sectors.

Major Learning Outcomes: Learnt the basics of valuation using different techniques.

Brief Description of working environment, expectations from the company: Conducive work environment with a lot of exposure and learning opportunities.

Name: Amod Yadav (2013A2PS615H)

Student Write-up

Short Summary of work done during PS-II: Index Reconciliation, Sending out client reports.

Tools used (Development tools - H/w, S/w): Excel, VBA and Python.

Objectives of the project: Structuring of Equity Derivatives Indices.

Outcomes of the project: I was able to understand their process of equity indices structuring.

Major Learning Outcomes: I became proficient in Excel, VBA, and Python. Also, I learnt a lot about equities derivatives.

Brief Description of working environment, expectations from the company: Working environment in the company is good. Here, everyone is very helpful.

Name: Giriraj Gorani (2012B3A4454G)

Student Write-up

Short Summary of work done during PS-II: Equity Research.

Tools used (Development tools - H/w, S/w): Microsoft Excel.

Objectives of the project: Making investment recommendation.

Outcomes of the project: Buy/Sell on Equity.

Major Learning Outcomes: Learnt Equity Research.

Brief Description of working environment, expectations from the company: Learnt Financial Modeling, Equity research, writing reports, analyzing quarterly and annual financial statements.

Name: Aditya (2012B3A4541P)

Student Write-up

Short Summary of work done during PS-II: Financial modelling, stock analysis, reports for clients and other research analyst related work.

Tools used (Development tools - H/w, S/w): MS EXCEL.

Objectives of the project: Provide appropriate unbiased research to clients to help them take informed decisions.

Outcomes of the project: Learnt financial modeling.

Major Learning Outcomes: MS Excel.Learnt about corporate etiquette.

Brief Description of working environment, expectations from the company: It is one of the best companies to work for. Treats interns as employees and gives them work accordingly.

Name: Vishal Tripathi (2013A1PS669P)

Student Write-up

Short Summary of work done during PS-II: Work undertaken includes understanding of the various strategies used to create indices, the structuring of these indices, modelling and scripting them and analyzing the index payoffs. Along with scripting the algorithms, handling the operational risks and controls also was a big part of the work.

Tools used (Development tools - H/w, S/w): Python, Enaml, C++, Athena and Microsoft Visual Studio.

Objectives of the project: To understand the infrastructure of macro investible indices through the eyes of Quantitative Research.

Outcomes of the project: The projects undertaken allowed the macro index business to grow in terms of the trade infrastructure. It also contributed to the handling of operational risks and controls. Lastly, the various tools built helped the organization for the daily business needs.

Major Learning Outcomes: From the learning point of view, the tech part including coding in python was a major benefit. Moreover understanding the index business and the various models also was a big plus.

Brief Description of working environment, expectations from the company: The working environment is one of the best and most conducive to growth and learning. The team is very helpful and a lot of emphasis is put on learning. Constant interaction with the on-shore team is made sure of, to realize the importance of the work. The company puts the employee's needs as a priority and hence the work environment is very healthy.

PS-II Station: Klientas, Trivandrum

Student

Name: Bhakta V Pande (2011B2A1562G)

Student Write-up

Short Summary of work done during PS-II: Event Marketing and Management.

Tools used (Development tools - H/w, S/w): Microsoft Office, Search Tools.

Objectives of the project: To maximize company exposure through events.

Outcomes of the project: Successfully organized events that have benefited the company immensely in terms of revenue and client engagement.

Major Learning Outcomes: Data handling, Work Ethics, Professionalism, Client Management and Networking, Telemarketing and Sales.

Brief Description of working environment, expectations from the company: Great learning environment for applied individuals. Also have all the basic necessities for the job.Welcoming employees and warm working environment. Work is expected to be completed as any unfinished work indirectly hinders the progress of other employees.

Name: BIBIN P GEORGE (2013A3PS312G)

Student Write-up

Short Summary of work done during PS-II: Event Management and Social media Marketing & Promotion.

Tools used (Development tools - H/w, S/w): Microsoft Office, Web search tools.

Objectives of the project: To learn organization of events and to efficiently promote their popularity through social and digital media. To use advanced web search tools in order to collect the necessary data required for the success of the events.

Outcomes of the project: Organized various events and in doing so increased the popularity of the company as well as the events through social and digital media.Used the collected data for the promotion of the company as well as events.

Major Learning Outcomes: 1. Become proficient in collecting data through the use of advanced web search tools. 2. Became familiar with marketing through social and digital media. 3. Became familiar in organizing events and managing the data for them.

Brief Description of working environment, expectations from the company: Uninterrupted internet is available at the company along with all the basic facilities. The company expects the students to be very familiar with internet as well as social media. The students should be able to handle multiple tasks. The interns should also bring their laptops since it will make working much easier.

PS-II Station: KPMG, Bangalore

Student

Name: Raag Gupta (2013A8PS737G)

Student Write-up

Short Summary of work done during PS-II: The work majorly involves profiling and cold calls for business development. There are opportunities to go offsite to client location for license reviews.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Profiling prospective clients and business development.

Outcomes of the project: Exposure to different industries and interaction with executives.

Major Learning Outcomes: Excel, communication, culture, travel.

Brief Description of working environment, expectations from the company: The work majorly involves profiling and cold calls for business development. There are opportunities to go offsite to client location for license reviews. They expect you to learn. Co workers are really good, cooperative and fun. They are helping and act as mentors and help you out with work and learning.

Name: Apoorva Bhide (2013A8PS740G)

Student Write-up

Short Summary of work done during PS-II: Profiling work.

Brief Description of working environment, expectations from the company: Quality of work was very bad, no learning experience. People were very good for the most part, with a fair share of office politics. Expected better learning opportunities.

PS-II Station: KPMG, Gurgaon

Student

Name: Naman Shinghal (2012B3A3408P)

Student Write-up

Short Summary of work done during PS-II: I was a part of multiple assignments during the internship programme in the domain of Intellectual Property Asset Management (IPAM) including Techno-Commercial evaluation of patents, Fraud detection using data analytics, Brand protection & data security. One of the key responsibilities in my role required me to evaluate strategic patents for technical, commercial & legal aspects. The process involved patent searching techniques coupled with techno-legal-commercial analysis to identify the viability of a given patent. Another key project involved the identification of counterfeiting and diversionary activities for a top FMCG firm applying data analytics to selected data sets. A number of testing methodologies were defined & implemented for the same.

Tools used (Development tools - H/w, S/w): MS Excel, MS PowerPoint.

Objectives of the project: The key objectives for the various projects undertaken at KPMG were -1. Patent Evaluation - Technical feasibility analysis. - Commercial & white spaces evaluation. - Valuation of patent. - Identifying the robustness of patent claims from a legal standpoint. 2. Fraud detection - Identify potential source of leakages for product & packaging. - Identify suspect distributors. - Perform field visits to monitor Standard operating procedures.

Outcomes of the project: 1. Patent Evaluation (Completed)- Technical feasibility analysis performed for 5 patents.- Commercial & white spaces evaluation performed for 5 patents.- Valuation of patent methodology developed.- Identifying the robustness of patent claims from a legal standpoint performed for 5 patents. 2. Fraud detection (In progress)- Identified the potential source of leakages for product & packaging.- Identified the list of suspected distributors.- Performed field visits to monitor Standard operating procedures at various client sites.

Major Learning Outcomes: The key learning outcomes involve the development of advanced data analytical techniques to perform fraud detection.Additionally, to understand the technical, legal &

commercial basis for a new invention. I was also able to enhance our skills in development and implementation of a proposal.

Brief Description of working environment, expectations from the company: KPMG India, Gurgaon office is situated in DLF Cyber city in Gurgaon, giving one a ringside view of the corporate world. The organization has well defined targets for the trainees to achieve, and people are approachable. The organization expects you to come up to speed quickly, and deliver on live projects from the very beginning. Most of the work related learning is on the go. The specific role allocated to me involved working on the intellectual property team here, which is a new practice being setup. This provided one with the experience of being in a startup environment within a big four organization.

Name: Shivam Abhay Sharma (2012B5A3967H)

Student Write-up

Short Summary of work done during PS-II: Learning the basics of deployment of client software on customer's base and understanding the different ways to figure out license non-compliance and how to report them with substantial proof. Also i got an opportunity to learn how intellectual property and patent can be used defensively by an organization and the increasing contribution these can have towards the revenues.Also learned about parameters that are used to evaluate patents and also how to evaluate a patent.

Tools used (Development tools - H/w, S/w): Microsoft EXCEL and Microsoft Power-point.

Objectives of the project: Data Analysis to pick out gaps in Licenses bought by customer firm and reports them to client firm.

Outcomes of the project: A Report to be sent to both client and customer firms about findings by KPMG.

Major Learning Outcomes: Data Analysis in Excel.

Brief Description of working environment, expectations from the company: The working environment is that of a consulting and Audit firm. Wherein there are very strict standards for reporting and quality of data analysis. Also the timings are very strict that is from 9 to 5:30. The organization works on a chargeability basis wherein you have to maintain a charge ability of above 80%. Working environment as such is very friendly and all employees are eager to help.

Name: Harshdeep Singh Hora (2012B2A4540G)

Student Write-up

Short Summary of work done during PS-II: During the course of PS-II, I was responsible for: 1.Studying and contributing towards developing a rationale on different megatrends that would impact the business of the client in the near future (till 2030). These analyses include research on megatrends such as demographic shifts in population, change in economic power, changing climate regulations, increase in technological capabilities and sophistication, etc.2.Research on different oil & gas majors in the world (Shell, StatOil, British Petroleum and Petronas etc.) and understanding their organizational structure especifically focusing on their Engineering, Procurement & Construction functions. 3.Analyzing the Indian electric vehicle (EV) market and its opportunities for growth, along with the following - (a) I was also responsible for developing a timeline tracking the growth of the EV market in China and identifying possible key reasons for the rapid growth of EVs in China. (b) Exhaustive research on major players in the Chinese EV market with special focus on passenger vehicles (4-wheelers and 2-wheelers) with a complete database of vehicle variants, features and specifications. The same research was done for Indian electric and gasoline 2-wheelers. (c) Primary research – information on specifications & other aspects such as maintenance costs for both IC engine and electric vehicles was obtained by calling up vehicle dealerships across 6 different Indian major cities for multiple automotive brands (Suzuki, Honda, Hyundai, Chevrolet and Mahindra). (d) Studying the changing perspective of nations globally towards climate change. An in-depth study was also done for the policy structure set up by governments globally (USA, China, UK, Netherlands, and Norway, Japan etc.) in order to increase the uptake of EVs. A similar study was done for the policy push and incentives in place by the Indian government.

Objectives of the project: Researching new areas in energy for an Indian oil and gas company

Outcomes of the project: Significant research was performed on the uptake of electric vehicles in Indian and other global markets, and relevance of the same was identified for the client business. The research helped in contributing to a kick-starter plan for the client.

Major Learning Outcomes: Performing primary & secondary research, forecasting

Brief Description of working environment, expectations from the company: I interned at KPMG India in the Strategy & Operations team, under KPMG Advisory services. Being in a management consulting role, the transition from college to work life was tough in the initial stages. There was a thorough re-vamp of my daily schedule from college. The new schedule demanded more advance planning and punctuality which was in stark contrast to my schedule in college where time-tables were flexible and there was room for spontaneous planning. As I went through the rigors of day-to-day work and faced new challenges, I realized the importance of being one step ahead of the herd, which was very similar to the set-up in college, albeit in a less competitive setting. Internalization is a trait that needs to honed, when in the corporate setup. While the transition from an academic setting to a professional one posed to be both considered a challenge as well as a learning experience, the presence of a guiding and extremely helpful team tends to ease out the adaptation phase. My mentors were extremely understanding all throughout the course of PS-II, and undertook personal efforts to help me adjust to the rigorous nature of the work. My experience at KPMG has been very enriching and it was very rewarding to see my efforts being appreciated by my team. I am thankful to my mentors Mr. Mukesh Dhiman and Mr. Nitin Khanna, and my team members Mr. Varun Chaudhri, Mr. Pulkit Jain and Mr. Achintya Saurabh.

PS-II Station: KPMG, Mumbai

Student

Name: Prashant Sharma (2013A3PS096G)

Student Write-up

Short Summary of work done during PS-II: I have been a part of Forensics-CI team in KPMG which falls under the risk consulting department. The title of my P.S.-2 project is 'Third Party Due Diligence'. The work involves thorough investigation of the third party before our client makes an investment in that company. The purpose of due diligence is to mitigate risks that might occur by associating with an entity or individual. Various databases are looked up to gather information about the third party and comprehensive reports are prepared which are sent to the client. The work involves management due diligence, legal due diligence and financial due diligence.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Legal Databases, Regulatory Databases, Matlab.

Objectives of the project: To know about the third party and look up for adverse information regarding it, if present.

Outcomes of the project: A comprehensive report stating the information gathered about the third party, which includes a thorough financial analysis as well as a customer feedback for the firm.

Major Learning Outcomes: Economic Analysis, Financial Ratios, Microsoft Excel.

Brief Description of working environment, expectations from the company: A good working environment where work and the targets are given utmost priority. Company is flexible regarding personal approach to work, as long as the deadline is met. New ideas are welcome and it is ensured that the team works as a unit. Seniors are supportive and are always willing to help whenever required.

Name: Akshaya Babu (2013A8PS474G)

Student Write-up

Short Summary of work done during PS-II: I work in the Forensic-CCS team. It's mainly involved in conducting audits and advisory of software vendors and users. I, along with a few other interns was involved in the development of a tool that helps in data collection in client locations.

Objectives of the project: To ease the time spent in data collection by developing a tool in python language.

Outcomes of the project: Increased the efficiency of the audit process by 20 percent.

Major Learning Outcomes: Python language, Audit process, Clauses and legality of agreements.

Brief Description of working environment, expectations from the company: The team consisted of enthusiastic people driven towards their common goal.The work was divided into modules and deadlines were set. The company was flexible in providing resources and the people were always up to discussion regarding the progress of the work and willing to help.

Name: Priyanka Tata (2012B1A1669G)

Student Write-up

Short Summary of work done during PS-II: Work comprised of extensive market research and building of ready reckoners for financial services team at KPMG. Was a part of making several proposals and proactive part for scoping study for several clients. Currently, working on two projects- one of them focuses on optimizing the process for a top financial institution in the country. Second one focuses on primary research including interviewing several CXOs across various sectors to publish a report on the current IT Staffing scenario in India.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Visio.

Objectives of the project: To source Process and Cost Optimization strategies for Companies in BFSI Sector.

Outcomes of the project: Client acquisition and successful delivery of a project.

Major Learning Outcomes: Gained immense domain knowledge across various sectors.Exposed to client interactions, alignment of thought process with the Client mindset.Efficiency in data analysis using Excel.

Details of papers/patents: Confidential.

Brief Description of working environment, expectations from the company: Learning opportunities are immense, however, extremely poor work life balance. Working up to late at nights and on weekends is very common and interns are highly underpaid for the level of expectations from them. Also, the HR Team is not approachable and their processing of requests is inefficient. Having pointed these out, it's a good place to start the consulting career in strategy and operations.

PS-II Station: Market Data Forecast, Hyderabad

Student

Name: Palugulla Vikramaditya Reddy (2012A4PS290P)

Student Write-up

Short Summary of work done during PS-II: Good experiences regarding learning marketing.

Tools used (Development tools - H/w, S/w): Word, Plagiarism Checker X.

Objectives of the project: To make promotions to get clients.

Outcomes of the project: The Company have good atmosphere, have a reliable team leaders.

Details of papers/patents: Understanding of different types nationwide markets.

Brief Description of working environment, expectations from the company: How to make documents in a organized manner to get clients attention.

Name: Hamza Bin Masood (2015H149275P)

Student Write-up

Short Summary of work done during PS-II: Secondary Research: Procurement and analysis of data through secondary sources. Primary Research: Directly contacting industry professionals in order to get tangible qualitative data. Market Mapping & sizing: Understanding the market using proper segmentation and sizing techniques. Forecasting: Based on the qualitative and quantitative data, forecasting the future market potential/value using econometric & mathematical tools. Research Report Deliverables: Preparation & documentation of qualitative information in the form of DROC (Drivers, Restraints, and Opportunities & Challenges), SWOT analysis, PESTEL analysis, Porter's 5 forces analysis, etc. pertaining to a specific market.

Tools used (Development tools - H/w, S/w): Advanced Excel (For estimation), Word (For write-ups).

Objectives of the project: Worked on multiple projects (Research reports). Some of them are as follows: 1. Global Frozen Bakery Market 2.Asia Pacific Biostimulants Market 3.Global Advanced Wound Care Market, etc.

Major Learning Outcomes: Learned how to prepare a market research report from very scratch.

Brief Description of working environment, expectations from the company: As the company is still in its nascent stages, work environment is not very conducive. Stipend is very low. Not everyone is lucky enough to be put in Market Research division; other divisions have no learning at all. Company needs to give more impetus to its management, as it requires huge amends.

Name: Pankaj Bishnoi (2015H149223P)

Student Write-up

Short Summary of work done during PS-II: Secondary Research, gathering all the company related information including but not limited to financials, product analysis, M&A etc.Collaborating the information gathered in the form of Drivers, restraints, opportunities & threats.Also analyzed the industry on the basis of Porter's 5 forces, PESTLE analysis, etc.

Tools used (Development tools - H/w, S/w): MS-Office.

Objectives of the project: Data Collection, Industry analysis. (Done for several reports).

Outcomes of the project: No specific project.Worked on several reports.

Major Learning Outcomes: Applied theory into practice.

Brief Description of working environment, expectations from the company: Fine.

Name: Rohit.K.Rajoriya (2014H313062H)

Student Write-up

Short Summary of work done during PS-II: I have worked here as an intern for writing promotional articles and report descriptions. The writing work requires extensive research on the given title. Unique content must be provided. Learning different professional writing styles and knowledge of the market is what i have gained while working with this organisation.

Tools used (Development tools - H/w, S/w): Microsoft office, Google Chrome.

Objectives of the project: To learn different aspects of market report writing.

Outcomes of the project: I have learned about professional promotional writing, different aspects of market and various sectors knowledge such as agriculture, food and beverages and healthcare.

Major Learning Outcomes: I have learned different professional styles of writing. My knowledge base of the market, companies working environment, and experience of tam management I have gained while working with this organisation.

Brief Description of working environment, expectations from the company: Working environment is good, timing is flexible to some extent work is not challenging enough, although opportunities for learning new things are ample.

Name: Priyanka (2013A4PS436H)

Student Write-up

Short Summary of work done during PS-II: Editing documents.

Objectives of the project: create unplagiarized content.

Outcomes of the project: views for the websites.

Brief Description of working environment, expectations from the company: very strict company. You will learn nothing while working here.

Name: Shree Vignesh Hariharan (2013A1PS354G)

Student Write-up

Short Summary of work done during PS-II: I was working as a Business Development Associate in the sales team at Market Data Forecast. I was mainly handling outbound calls and some low priority inbound calls to people in the marketing, sales, and business development departments handling bio-pharmaceutical products in the healthcare domain. I handle the regions of APAC (Australia, South East Asia, India, Pakistan, and China), and Europe (Germany, France, UK, Italy, Switzerland, Russia, and Scandinavian countries). The process involves everything from choosing a report to converting leads to prospects.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Outlook, and Word.

Objectives of the project: The objective behind this process is to attain information and experience in the complete end to end process of Business Development, starting from selecting a report to closing a client in the domains of Healthcare, Agriculture, and F&B.

Outcomes of the project: Thorough analysis of the end to end process of business development at Market Data Forecast and learning about the workings of the different tiers of companies in the healthcare, agriculture, and F&B industries and the employee hierarchies within them.

Major Learning Outcomes: Learnt about the workings of the different tiers of companies in the healthcare, agriculture, and F&B industries and the employee hierarchies within them.

Brief Description of working environment, expectations from the company: The working environment is relaxed but sincere. Complete freedom to walk to any person in the company for advice, guidance, or anything you require at any time. The work they require from interns in the research team is initially very simple and does not require much skill nor does it teach us much. Later if you have thechance to work on actual reports with the research team, then there is a lot to be learned from the research you have to do.

PS-II Station: Morningstar, Mumbai

Student

Name: Manan Shah (2012B4A4618G)

Student Write-up

Short Summary of work done during PS-II: Worked on the existing Morningstar Advisor application as a part of server side team. The work mainly involved working on new feature stories like Touch Id implementation in the app, framework upgrade issues and creating new APIs and services in the application.Also, worked on the India Smartphone application development. This project started after mid-sem evaluations.

Tools used (Development tools - H/w, S/w): Java 8.0, Play Framework, React-native, and Github.

Objectives of the project: Learn lots of great new technology that drives the Mobile segment and implement the programming skills to apply best practices and design principles to create world class iOS products aimed at presenting cutting edge investment research results for a wide variety of investors, fund managers and investment advisors globally.

Outcomes of the project: Learnt various technologies that drive the mobile segment and processes involved in developing an iOS application.

Major Learning Outcomes: Learnt lots of new technologies like Play framework and react-native. Also, learnt about AGILE software development processes and the best practices associated with it.

Brief Description of working environment, expectations from the company: Morningstar is an investment research company. The Mobile team which I was a part of, follow the AGILE software development process. There is a 15-day sprint where developers pick up tickets to work on depending on the goals they have set and their commitments. Also, there are daily standup meetings to update each day about the progress every day.

Name: Maithili Joshi (2012B1A7502G)

Student Write-up

Short Summary of work done during PS-II: Developed enhancements for the web application.

Tools used (Development tools - H/w, S/w): C#, angularjs, linq, sql.

Objectives of the project: Internal web application to improve process of Index Launch.

Outcomes of the project: Successfully delivered the requirements.

Major Learning Outcomes: Angular js and Linq.

Brief Description of working environment, expectations from the company: Good work culture, helpful team.

Name: Dhananjay Gupta (2012B5A4493G)

Student Write-up

Short Summary of work done during PS-II: I was in the Morningstar Indexes Technology team. I worked on the Index Launch Wizard Project where we had to created UI for the Operations/Product Management/Clients to work their was through various stages of Index Launch Wizard. Our job was also to take care of support requests raised by Data Management Team and New Product Development team.

Tools used (Development tools - H/w, S/w): JavaScript (AngularJS), C#, LinQ.

Objectives of the project: To develop and support technological products as per request by various Morningstar teams.

Outcomes of the project: Many support requests were debugged, tackled and documented.

Major Learning Outcomes: I can now develop a fully functional website from back-end to front-end.Got familiar with the .NET framework, AGILE methodology and Entity framework.

Brief Description of working environment, expectations from the company: The working environment has been good enough to provide the transition from academic scope to professional scope. Timings are fairly flexible. In terms of work, I got to develop new technological products and also had to do lot of debugging due to support requests. There are many technological projects since there is a movement

towards new technology for existing project but when they will be taken up, that is situational. The work allotted is equivalent to any normal employee and it is manageable. My manager and tech lead were considerate and approachable.

Name: Ankur Bhardwaj (2012B1A3843P)

Student Write-up

Short Summary of work done during PS-II: I've been working on server side and client side programming for Morningstar Advisor iPad App. Advisor app is the mobile companion to Morningstar Office that makes the Morningstar reports, ratings, and research the clients know available on your iPad. And the second app we've been working on here in Mobile team is Morningstar Retail App. The retail application is for individual clients and normal users.Both premium (clients who have taken a subscription) and non-premium users can use this app to get investment research on a wide variety of securities, portfolios, funds, indices, etc.

Tools used (Development tools - H/w, S/w): XCode 8, iPad Air 2.

Objectives of the project: Learn lots of great new technologies that drive the Mobile segment implement the programming skills to apply best practices and design principles to create world class iOS products aimed at presenting cutting edge investment research results for a wide variety of investors, fund managers and investment advisors globally.

Outcomes of the project: Implemented few new features including iOS touchID authentication for iPad Application and made couple of POCs while working on other functionalities as well.

Major Learning Outcomes: A holistic understanding of the major Morningstar products, its revenue drivers, who the clients are, purpose & functioning of the products, etc.An understanding and working proficiency of the standard software development processes & the workflow.A general know-how in programming - especially Objective C, Swift and React Native Adeptness at using various tools & software like SourceTree, github, Jenkins, Splunk, etc.

Brief Description of working environment, expectations from the company: Morningstar is an investment research and investment management firm Morningstar advisor application is the mobile companion to Morningstar Office that makes the Morningstar reports, ratings and research for theclients available on the iPad. Major work involves demonstrating how extremely complex financial research items & results can be presented in easy to decipher conclusive and decisive outcomes for a wide variety of securities, portfolios, indices & funds.

Name: Chetak S (2012B4A4522G)

Student Write-up

Short Summary of work done during PS-II: Student has worked on the following – 1. Project -1 ❖ Refresh fundamental and derived data points for updated back tests using python and SQL ❖ Worked on different proprietary tools and software to test different financial metrics ❖ Performed basic QA checks before the data is being used for back test and produce investable products. 2. Project -2 ❖ Proposed exclusion screens for best in class sustainable investing solutions ❖ Analyzed various climate change risks being implemented by various index providers in their products ❖ Understand various Morningstar index methodologies like Factor Tilt, Moat Foc, Dividend Leaders, Best in class indexes etc., Student has learnt the following new concepts – A. Evaluate global trends and developments in ETF and Indexes industry B. Concept of sustainable (ESG) investing C. Different Morningstar Index Methodologies D. Analysis of Indian Economy based on fund flows, sector valuations, Schillers CAPE etc., E. Executing codes on research platform using python, SQL F. Concept of Carbon Disclosure Project (CDP) and various ESG related concepts.

Tools used (Development tools - H/w, S/w): Python, SQL and Excel.

Objectives of the project: : To come up with a better python platform following object oriented programming which is efficient and makes index launches or back testing faster and easier. To come up with new strategies for responsible investing using ESG factors for upcoming index launch in US and developing markets. Work together with team to come up with ESG related index methodologies for sustainable investing.

Outcomes of the project: Proposed product involvement exclusion screens for best in class sustainable (ESG) investing, which was incorporated in all their benchmark ESG indexes. My research on CDP was highly appreciated as it helps them understand various jargons in ESG investing and incorporate climate change risks in their future product developments. Monthly data refresh of fundamental and derived data points helps them run updated back tests for different investment solutions.

Major Learning Outcomes: Understand various Morningstar index methodologies like Factor Tilt, Moat Foc, Dividend Leaders, and Best in class indexes etc., proposed exclusion screens for best in class sustainable investing solutions.Analyzed various climate change risks being implemented by various index providers in their products.Worked on different proprietary tools and software to test different financial metrics on research platform.Recent trends in ESG investing and ETF industry.

Brief Description of working environment, expectations from the company: Morningstar has a great working environment which encourages students to take initiatives and develop great understanding of business by actually involving students during research stage of the product development. Company expects students to have a minimum understanding of financial concepts with a basic knowledge of coding. They expect you to work on their existing projects supporting team members with daily tasks. Having a good understanding of statistical techniques helps you to provide valuable suggestions on their business and improve the efficiency of their back test models.

Name: Anurag Cheruvu (2012B2A4752P)

Student Write-up

Short Summary of work done during PS-II: In these 6 months of the PS-2, I have primarily started performing the tasks that I would be performing when I become a full time employee at Morningstar. I have been given the ownership of several of Morningstar's marquee, client-facing indexes such as GUNR, Value/Momentum, etc. I am also the owner of the Global Security Mapping process which creates the universe of securities with which we begin the reconstitution process.

Tools used (Development tools - H/w, S/w): I frequently work on Python and SQL for my work, besides MS Office (Particularly Excel).

Objectives of the project: The Global Security Universe needs to be populated and mapped between different vendors (with identifiers, etc.).

Outcomes of the project: All the securities would be mapped to vendor and global identifiers along with a country of classification and a security type.

Major Learning Outcomes: Became very comfortable with the use of Excel, SQL and Python.Learnt about the Global Security Mapping process.

Brief Description of working environment, expectations from the company: The working environment is great. There is immense learning that takes place and the work is challenging.

PS-II Station: National Council of Applied Economic Research,New Delhi

Student

Name: Mihir Wadekar (2012B3A3556G)

Student Write-up

Short Summary of work done during PS-II: At NCAER, you will be exposed to the various intricacies of policy analysis and if lucky you will get a chance to write an academic paper with your mentor. NCAER works on various projects from Government of India, to be an impartial observer of the policies implemented by government and how positive changes can be brought in it. I got a chance to work on the secondary data of NSSO. It gave me an immense amount of exposure to handle state and a right frame of mind to approach policy analysis.

Tools used (Development tools - H/w, S/w): Stata, Excel.

Objectives of the project: Building Synergies: Matching Business Reforms to Improved 'Ease of Doing Business'.

Outcomes of the project: Various reforms are suggested to GOI for improving EoDB in various sectors.

Major Learning Outcomes: Start to end exposure of a public policy analysis

Details of papers/patents: Health Expenditure by Indian Households: A Gender-aware Input Output Analysis.

Brief Description of working environment, expectations from the company: Working hours at nacre are not rigid and working conditions are pretty lax. The onus will be on you and it's up to you to extract the best out of NCAER.

Name: Yashvardhan Singh Rathore (2013AAPS314H)

Student Write-up

Short Summary of work done during PS-II: I was involved in 'Doubling of Farmers' Income by 2022' project allotted by Ministry of Agriculture to NCAER. My primary work was related to data management and collection and further I specially focused on horticulture data collection.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Find solution and frame suggestive policies to raise farmers' net income by two times.

Outcomes of the project: The report would be submitted to Ministry and would help government focus on few key points to increase the Farmers' Income.

Major Learning Outcomes: Learnt aspects of Agricultural Economy, worked on improving excel skills and got a close insight of policy making process.

Brief Description of working environment, expectations from the company: The academia is good but the research pedagogy needs improvement. Although you get to know about policy formulations, but a holistic revamp is needed in their internship program where they should have deadlines and proper learning channels.Working hours are fine, good colleagues but again they should innovate and try to bring in new research pedagogies.

Name: Upender Kataria (2012B3AA633H)

Student Write-up

Short Summary of work done during PS-II: I worked on various research projects details of which are following1. Direct Benefit Scheme Readiness of the states 2. Skill India mission 3. Barriers to inter-state migration in India 4. Gravity Models of Migration 5. Universal Basic Income 6. Business Evaluation Survey.

Tools used (Development tools - H/w, S/w): Excel, Tableu and Stata.

Objectives of the project: Since I did not work on just one project. Different projects had different objectives. Some projects had policy implication like Universal Basic Income. Some projects were supposed to lay the foundation to understand the concepts in public policy.

Outcomes of the project: The reports are yet to be out.Whether the govt accepts the suggestions we made as the part of project would decide whether the objectives are met or not.

Major Learning Outcomes: I got to know more about Govt programs like Universal Basic Income. Improved my proficiency in Excel. Got my hands dirty on software like Tableu.

Brief Description of working environment, expectations from the company: The overall working environment is good but some day's menial work was also given like getting documents scanned etc.Data Entry is the part and parcel of this job which I hate. The conferences were amazing. When you get an opportunity to sit across Montek Singh Ahluwalia and discuss things like Universal Basic Income, It could not get any better.

PS-II Station: National Entrepreneurship Network, Bangalore

Student

Name: Bharat (2013A8PS347G)

Student Write-up

Short Summary of work done during PS-II: Operations of Helpdesk and NEN Ecosystem.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Operations.

Outcomes of the project: Smooth flow.

Major Learning Outcomes: Efficiency and tracking.

Brief Description of working environment, expectations from the company: Friendly atmosphere, Easy going and easy work.

Name: Abhishek Sukhwani (2013A3PS284G)

Student Write-up

Short Summary of work done during PS-II: I was in Southeast Asia division of NEN. My work involved researching colleges and universities to run entrepreneurship courses in countries (Malaysia, Indonesia and Philippines) where we are already present. I was also studying about other entrepreneurship culture of other countries (Cambodia, Vietnam) where we can expand. Along with this, i was helping in management of entrepreneurship programs. This involves inviting participants, conduction of event, and efficiency analysis after the event. Continuous recording of a lot of parameters was also done to track the progress.

Objectives of the project: To learn the management of entrepreneurship events organized by NEN.

Outcomes of the project: Made few recommendations to improve the efficiency of the system.

Major Learning Outcomes: Learnt about entrepreneurship and management.

Brief Description of working environment, expectations from the company: Work environment at NEN is good. Those who are interested in learning about entrepreneurship or planning to start your own start up can opt for this PS. NEN has many divisions like marketing, content development, ecosystem etc. Students can ask to work in any of these division (depends on the availability of work) and learn about that field.

Name: Karthik Chendika (2013A3PS409H)

Student Write-up

Short Summary of work done during PS-II: Worked on secondary research on Startups and SME's. Read a lot of research papers and articles and made concise reports on the material.Helped in a few events that NEN was conducting.

Tools used (Development tools - H/w, S/w): Excel, Word, and PowerPoint

Objectives of the project: Make a comprehensive research article on the SME ecosystem for the Wadhwani Foundation. This will help the organization to decide which part of the country, sector, or industry to focus on the most.

Outcomes of the project: Helping Wadhwani foundation to decide which city or cluster or industry/sector to focus the most on.

Major Learning Outcomes: Learnt about SME and Startup ecosystem in our country. Had a glimpse of how government policies affect small businesses.

Brief Description of working environment, expectations from the company: Relaxed environment with great work ethics.Friendly to interns.

PS-II Station: Nomura Global Markets, Mumbai

Student

Name: Anirudh Sridhar (2012B3A4590P)

Student Write-up

Short Summary of work done during PS-II: Working as a part of the Risk and Control function. Core responsibilities include better embeddedness of policies and procedures and overall better governance in the processes throughout the various risk functions. End deliverables include presenting findings and recommendations to senior management, the COO's office and the CRO.

Objectives of the project: Improving overall governance and recommending process changes for improved effectiveness and regulatory adherence.

Outcomes of the project: Appreciated for suggested recommendations in ad-hoc reviews conducted on processes across Risk management.Improved overall governance towards access permissions.

Major Learning Outcomes: Understanding and navigating the corporate complexities in a work environment. Uses of advanced excel in Risk functions.Regulatory environment for investment banks.

Brief Description of working environment, expectations from the company: Extremely hospitable. Work culture is very nurturing and the structure is flat. The interns are required to be keen in taking up responsibility and working independently and exhibit a keen interest in the working of different Risk functions.

Name: Harsharn Kaur (2012B3A7526P)

Student Write-up

Short Summary of work done during PS-II: My project at Nomura aimed at reducing the number of suspicious data points to be reviewed manually for the purpose of Data cleaning procedure. Historical Market Data group is responsible for maintaining the correctness of the data used for Value at Risk (VaR) calculations. For this purpose, time series data of various financial instruments including Equity, Rates, Credits and Future products needs to be manually inspected. In case of any suspicious

movements, one needs to verify it with the source, taking up a lot of time. Since most of these points turn out to be false positives, the entire data cleaning process takes a lot of man hours. There has been recent development in the anomaly or novelty detection in Time Series data using Machine Learning. My work involved getting myself familiarized with the current logic of exception (suspicious points) identification and modifies the current logic using Machine Learning. I was also assigned with several assignments which made me more acquainted with different data quality checks around different financial instruments.

Tools used (Development tools - H/w, S/w): MATLAB, Excel.

Objectives of the project: To reduce the number of suspicious data points to be reviewed in Time Series.

Outcomes of the project: Several supervised and unsupervised machine learning techniques were explored for the purpose of project. It succeeded in cutting down false positives by 80%.

Major Learning Outcomes: Machine Learning techniques, Risk Management.

Brief Description of working environment, expectations from the company: My six month internship with Nomura Financial Services Pvt Ltd was an enriching experience. My team, Historical Market Data group, is a dynamic team of seven, which provided me with a smooth transition from a college to a professional world. I was not treated any different from a full time employee in terms of work and responsibilities. One can expect to get an overview of how risk is managed in Investment Banks, how different teams like Market Risk and Credit Risk function and how information flows from Front offices to Regulatory Bodies. My project attracted attention from higher management as it was based on Machine Learning, in line with FinTech initiatives encouraged by the firm.

Name: Geet Kalra (2012C7A2858P)

Student Write-up

Short Summary of work done during PS-II: Worked in Prime Services and Financing Risk team working as a Risk Manager. Worked on A-Z for the financing businesses.

Tools used (Development tools - H/w, S/w): Excel VBA.

Objectives of the project: Financing Risk Management.

Outcomes of the project: Good knowledge about the business.

Major Learning Outcomes: Risk Management techniques and Trade Analysis.

Brief Description of working environment, expectations from the company: Initiative taking is encouraged. Innovation is at the heart of the firm.

Name: Karthikan Chander Shekar (2012C7A1751P)

Student Write-up

Short Summary of work done during PS-II: Topic of Project: Financial Reporting of Futures and Options trading desk in Product Control. It's a Business As Usual (BAU) project which involves performing a certain set of tasks, in a predetermined order, on a daily basis. The main role of a Product Controller is to generate Profit and Loss reports of the trading desk that the handle. They are responsible for ensuring that traders mark their books to fair value and to act as the primary point of contact for the portfolios they look after.

Tools used (Development tools - H/w, S/w): Microsoft Excel and VBA.

Objectives of the project: 1) Generating Income statements of the portfolios looked after. 2) To ensure PnL is reported accurately and provide reconciliations between front office and back office.

Outcomes of the project: To understand of the role of Product Controllers in a Multi-national Investment Firm.

Major Learning Outcomes: Accounting of Financial Instruments.

Brief Description of working environment, expectations from the company: Very professional MNC working environment. Interns are expected to own their work and perform at par with employees.Lot of opportunities in Product Control.PPO chances highest for both SEM PS students and next for those who do PS in second SEM. A good understanding of Financial Accounting is a must. Company has a policy of offering standard packages for Bitsians and IITians alike.

Name: Arjun Deshpande (2012B3A1598H)

Student Write-up

Short Summary of work done during PS-II: Worked in Foreign Exchange team in Product control. Work included doing front office back office reconciliations, investigating flash versus actual variance, reporting Profit & loss statement to Traders & higher Management and attributing unexplained P&L to various risk buckets. The work was not project based but BAU.

Tools used (Development tools - H/w, S/w): Mostly Nomura propriety software is used, along with Advanced excel, VBA.

Objectives of the project: To report Profit and loss statements to the higher management.

Outcomes of the project: Successfully preparing P&L statements for the traders.

Major Learning Outcomes: Understanding of foreign exchange markets, trade life cycle, improvement in product knowledge, working in corporate environment.

Brief Description of working environment, expectations from the company: Culture of the company is great. There's open door policy, you can approve any employee however senior for doubts or suggestions.Though this specific profile would be of interest to people who are more inclined towards financial accounting. The core competencies of BITS students don't match with the job description in this role (Global finance analyst).

Name: Avidipto Chakraborty (2012B3A7506G)

Student Write-up

Short Summary of work done during PS-II: The report briefs about the credit risk associated with common debt instruments and discusses various credit derivative instruments that help hedge against the credit risk and also describes various other derivative instruments that help enhance the yield of an investment by associating with credit risk.

Objectives of the project: Daily work.

Major Learning Outcomes: 1) MS Excel - VBA Programming although this was not a pre-requisite for the work I did, having a basic idea of coding helped a lot. In my free time, I used to go through snippets of Macros of the existing processes to better understand and improve the efficiency of the daily work. 2) Functioning of Derivatives Being an economics student, I did not have to spend any time getting used to the jargon used in daily communication - this was a huge advantage. 3) Interpersonal Skills The biggest take away from my time in Nomura was the understanding of the how important interpersonal skills were. At every step, whatever we are communicating - there is always a better way to do so. I believe this will help me in all my future dealings.

Name: Vipul Sharma (2012C7A1804P)

Student Write-up

Short Summary of work done during PS-II: Regular work involved pricing structured finance products which are basically combinations of calls, puts and swaps (derivatives based on different underlying references, ex. Rates, FX, equity, credit, etc) based on client needs and requirements.Also, assisting sales team with pitch books, back testing and preparation of term sheets as a part of post-sales activity.

Tools used (Development tools - H/w, S/w): Excel, PowerPoint and Nomura's in-house pricing tool.

Objectives of the project: To price structured financial products.

Outcomes of the project: To competitively price structured products and successfully market them.

Major Learning Outcomes: Understanding of Derivatives and derivative products, general knowledge of economics, finance and markets.

Brief Description of working environment, expectations from the company: Professional working environment, fair amount of work, fair work culture, good amount of exposure.

PS-II Station: Quality Council of India, Delhi

Student

Name: Abhishek Sharma (2013A1PS666P)

Student Write-up

Short Summary of work done during PS-II: My first project named 'SBM-500' or more commonly known as 'Swachh Survekshan – 2017', was an implementation project with Ministry of Urban Development. 'Swachh Survekshan – 2017' is a survey to rank 500 cities of India based on cleanliness and other aspects of urban sanitation. I worked as coordinator between ULBs (Municipalities) and our assessors who went on field for ground level inspection. I reviewed (Quality Check) their work and gave the score to city. I did quality check for 10 cities in India and it was a great experience. After assessment was over, I worked on report writing part of the project. I calculated the relative rankings of cities based on their performances in 2014, 2016 and 2017 survekshan. I worked with Ministry of Petroleum & Natural Gas team in the latter half of my PS2. MoPNG team worked directly from ministry office in Shastri Bhawan, Central Secretariat. I worked on petrochemicals project which studies the demand/supply scenario of petrochemicals in India in 2030 and proposes possible capacity expansion of petrochemicals plants in India. This was a Strategic project or Research type of project opposite to SBM-500 which was an operational project. Project is still in its initial stages of implementation. Apart from this, I was assigned the financial work of PMUY's call centre. I finished all the billing work which was pending since November last year by managing all the shareholders in the process. It was a great experience working in QCI.

Tools used (Development tools - H/w, S/w): Excel, Collect Android App and its web interface.

Objectives of the project: 1.Ranking of 500 cities of India on cleanliness and other aspects of urban sanitation.2.Estimation of demand & supply scenario of petrochemicals in India in 2030 and possible capacity expansions.

Outcomes of the project: 1.500 cities were ranked under 'Swachh Survekshan – 2017' and results were declared by MoUD on 4th May, 2017.2.Estimation of demand & supply is complete. Various possible capacity expansions are under study.

Major Learning Outcomes: 1. Improved Excel skills 2.Exposure to various govt departments and their workings 3.Improved Communication skills 4.Knowledge of Financial terms used in billing and work orders of different projects 5.Exposure to Consulting work 6.Improvement in Report Writing and Summarizing

Details of papers/patents: Brief Description of working environment, expectations from the company: I worked under Chairman's Office formed in 2015 as a social sector consulting organization under Quality Council of India (QCI). Therefore it offers a bit different work than what core QCI profile shows. The Chairman's office works with various ministries in the government both at center and state level. Broadly, the projects in the chairman's office can be divided into two types of projects – Strategic Projects & Implementation Projects. Strategic projects typically involve working with government and assisting bureaucrats in problem solving and managing an issue of importance. Usually a team of 5-6 members works directly from ministry office. Implementation projects typically involve the chairman's office taking over the implementation of a particular govt. scheme or initiative and executing it in its entirety. E.g. Swachh Survekshan – 2017. If anybody wants to work in some consulting organisation in future, than it is a great place to start. As the set-up of the Chairman's office is similar to that of a start-up, it offers great exposure to work and learning opportunities. Also people who want to go for civil services or in some govt setup they can also get good work experience here as they will be working closely with bureaucrats and govt officials. Average age of employees in the Chairman's office is around 23-24. So it's quite an energetic team and we could easily connect with team. There are quite a few BITS alumnus in Chairman's office so one can always ask for help in the case of some problems.

Name: Archit Aswal (2013A4PS295G)

Student Write-up

Short Summary of work done during PS-II: I have worked in 3 different project i.e. Swachh Survekshan(Ranking of 434 cities pan India Based on sanitation) , Department of industrial policy and promotions(Assessment of pollution creating Industries) and National trust(Assessment for schemes running in NGOs for People with disabilities). The work type was assessment, primary and secondary research, operations and management. In Swachh Survekshan my work was restricted to document verification and basic operations; while in DIPP the work is more of research type in which I had read

quite a few documents related to 4 industries i.e. cement, rubber, paper and leather to develop framework for assessment; In National Trust which is on-going project, my work was to go for pilots and improve questionnaires and field visits.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Assessment of swachh bharat mission, industry pollution and national trust schemes.

Outcomes of the project: Swachh sarvekshan 2017.

Major Learning Outcomes: Public policies, assessment.

Brief Description of working environment, expectations from the company: Working environment is great. Working hours might stretches up to 16 hours/day. But the whole staff and colleagues are encouraging and helpful. Company expects you to be ready 24x7. There has been some really responsible work from day one. GREAT exposure. I have worked with more than 5 projects partially and 3 projects fully. I got the chance to learn about various departments and governance.Loved working here. Thank you PSD.

Name: Vital Bansal (2013A4PS349P)

Student Write-up

Short Summary of work done during PS-II: I have worked on three projects in qci those are SBM-SS 2017, DIPP and National Trust ranking. I worked in planning phase of project and also the operational phase. In planning phase research for the project is done. In operational phase the quality checks are done.

Tools used (Development tools - H/w, S/w): Excel, collect- data collection app.

Objectives of the project: Ranking of cities on the basis of cleanliness, ranking of NGO under NT.

Outcomes of the project: Detailed report on Swacch cities across India.

Major Learning Outcomes: Communication skills, public policy, assessment.

Brief Description of working environment, expectations from the company: Good exposure, good working environment, working hours depends on project you are in**.**

PS-II Station: Sattva Media & Consulting Pvt Ltd, Bangalore

Student

Name: Arnav (2012B2A3757P)

Student Write-up

Short Summary of work done during PS-II: Worked on projects in the development consulting domain with clients in impact investing, agricultural technology and education domain.

Tools used (Development tools - H/w, S/w): Softwares used: MS Word, MS PowerPoint, MS Excel.

Objectives of the project: To develop a landscape for social investing across Asia and identify key trends and develop recommendations for investors.

Outcomes of the project: Successfully developed a 300 page report for the client which is to be launched at the annual conference in Thailand with more than 600 attendees.

Major Learning Outcomes: Gained unique insights in the field of development consulting, report writing, client expectation management and professional conduct.

Details of papers/patents: Papers published: 1. Social investment landscape in Asia, insights from Southeast Asia, 2017, 2. Social investment landscape in Asia, insights from North and South Asia, 2017.

Brief Description of working environment, expectations from the company: The work environment is very collaborative and supportive. The organisation has a very strong culture and work ethic. The company offers ample opportunity to take up a project in a domain of your choice.

Name: Pratik Jha (2012B2A1704G)

Student Write-up

Short Summary of work done during PS-II: A lot of Secondary research, database representation, report writing and interviews.

Tools used (Development tools - H/w, S/w): Excel, Photoshop, MS office.

Objectives of the project: A 280 page report submitted to AVPN to be presented in their conference.

Outcomes of the project: Report submitted.

Major Learning Outcomes: Great amount of research and data skills.

Details of papers/patents: Co-authored in the paper "Social Investment Landscape in Asia" by AVPN-Sattva.

Brief Description of working environment, expectations from the company: The environment is brilliant, the work can be tiring at times but it is highly rewarding. People are really motivating and helping.

PS-II Station: TimeInc (Time Analytic & Shared Services Private Limited), Bangalore

Student

Name: Anunjay Nath (2015H142134P)

Student Write-up

Short Summary of work done during PS-II: I was a part of the TIME Inc Retail team which is involved with the Print Magazine Business of the company. The team is responsible for deciding the distribution management of the various magazine brands. The final objective is to decide as to which store how many magazine copies should go.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Print Distribution management of TIME Inc. Clients.

Outcomes of the project: Allocating the number of magazine copies that should go for a particular magazine title, to a particular store based on its sales pattern and present content.

Major Learning Outcomes: Supply chain of US Magazine Industry Advanced Excel and Macros.

Brief Description of working environment, expectations from the company: The shifts are flexible.

The work life balance is great.

Name: Subeesh KB (2015H149292P)

Student Write-up

Short Summary of work done during PS-II: My work was to assist both marketing as well as supply chain management teams in their day to day tasks and projects.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: To accomplish the day to day tasks assigned and make sure it is delivered on time.

Outcomes of the project: Proper execution of various day to day tasks and projects.

Major Learning Outcomes: Learned a great deal about MS Excel and the distribution, supply chain management of magazines in US market.

Brief Description of working environment, expectations from the company: Working environment is good but the learning opportunities are very limited as the work that's assigned isn't something that needs a lot of knowledge. No expectations from the company.

Name: Rohit Valluri (2015H149261P)

Student Write-up

Short Summary of work done during PS-II: I am working with the marketing team of Time Inc Retail. I deal with Sales and Brand Management. The work is about providing analysis using different reports and methods.

Objectives of the project: No specific objective.

Outcomes of the project: I work on different projects with different outcomes.

Major Learning Outcomes: Marketing Analytics, Advanced Excel.

Brief Description of working environment, expectations from the company: The work culture of the company is very good the timings, cross team learning etc. In terms of work do not expect high level projects, all projects I worked are basic and simple. But the learning experience is very good.

Name: L J Dileep (2015H149297P)

Student Write-up

Short Summary of work done during PS-II: Store level magazine allotment process of Time Inc. Learnt the process Time Inc. follows to set the number of magazine copies sent to stores in US and Canada. Followed this process daily.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: Distribution of Magazine in US and Canada Stores.

Outcomes of the project: Followed the process to complete the daily work.

Major Learning Outcomes: Learned keyboard shortcuts in MS Excel.

Brief Description of working environment, expectations from the company: The working environment was mostly relaxed although there were minor troubles caused mainly due to employee politics. Expected a more challenging role where I could apply some MBA concepts. There were no scopes for any innovations. I was trained for two days on a process which I was asked to repeat almost every day. I tried to suggest certain improvements in the process using VBA and Macros but was not really encouraged by the organization.

PS-II Station: TimeInc. Viacom18 Media Pvt. Ltd., Mumbai

Student

Name: Yashasvi Joshi (2013A8PS751G)

Student Write-up

Short Summary of work done during PS-II: Work on sales decks for clients for advertising on Voot, reviewing content to be put up on the platform and making marketing proposals for Voot Kids.

Tools used (Development tools - H/w, S/w): MS Excel, PowerPoint.

Objectives of the project: Designing and implementing initiatives to grow Voot platform.

Outcomes of the project: Successful partnerships with clients through innovative methods for analyzing the data available and presenting the analysis.

Major Learning Outcomes: Better idea into making marketing proposals, reviewing content on digital media and the current competition in this market.

Brief Description of working environment, expectations from the company: The Company has a good working environment with supportive people and gives a good exposure to the dynamic nature of the digital media industry and VOD market.

Name: Pragyan Trivedi (2013A4PS063P)

Student Write-up

Short Summary of work done during PS-II: I work with the Growth & Innovation team where the objective of the projects is to find and implement better strategies at VOOT, the OTT video platform of Viacom18. Majority of the work was focused on Sales Strategy and sales pitch decks for advertisers. There were also some projects on data enrichment of the user profiles.

Tools used (Development tools - H/w, S/w): PowerPoint, Excel.

Objectives of the project: To implement strategies to grow Voot.

Outcomes of the project: Improved Sales deck presentations with valuable audience insights contributing directly to the revenue of the organization. Better user profiling compared to the initial knowledge of users.

Major Learning Outcomes: Understood the functioning of a digital media firm. Better idea about B2B sales and data analytics.

Brief Description of working environment, expectations from the company: The work environment is very good. People are very friendly and ready to help. No strict hours. Company requires final outcome of the projects.

Name: Archit Gadhok (2012B2A7758P)

Student Write-up

Short Summary of work done during PS-II: As interns, we were part of the growth and strategy team at Viacom18 Digital Ventures, taking up key initiatives to boost the growth and ultimately revenue of their consumer facing digital OTT platform - Voot. To satisfy this objective, the interns were involved in supporting some key initiatives taken by the Sales and the Marketing team - taking these from the initiation to their final completion. From creating Sales decks for important client meets to organizing the country's first digital media hackathon, the work ranged a gamut of activities.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Microsoft PowerPoint.

Objectives of the project: To plan and execute initiatives to grow VOOT (their OTT platform). Initiatives included growing user base, understanding user behavior to increase user retention on the app, developing advertisement sales strategy to get potential advertisers on board, all leading to an increase in bottom line and top line.

Outcomes of the project: Following were the major outcomes of our work Consumer profiling- Developed rules to assign gender and age of over 10 million users on VOOT-leading to customized user

experience and better personalized Ad targeting. Increased User retention- Analyzed user behavior- frequency and duration of viewing, time of the day when users visit the platform, when do users drop out, how do they navigate inside the app, which videos do they watch. This helped to identify the best UI/UX experience and replicate it to all users Ad Sales Strategy and Client Prioritization- Analyzed TV spending data- Overall Top Advertisers, Top Advertisers on HD channels, advertisers during Prime Time and other factors to come up with a list of potential advertisers that would be most likely to spend on VOOT.

Major Learning Outcomes: As a generalist, we got an overall view of the media industry, especially the rapidly growing digital media and OTT industry. As part of the client and vendor meeting, we learnt the soft skills of negotiation and corporate hard-balling to get deals done. On a hard skill level, Excel and PowerPoint were the primary tools in our arsenal.

Brief Description of working environment, expectations from the company: Being a media company, the work culture and environment is pretty relaxed and chilled out. But they do know how to get work done, and you might need to pull-in a few all-nighters if big client pitches (read HUL & PnG) are around the corner. PPO's can be expected since the team is growing and wants to grow further.

Name: Saahil Khetan (2012B3A7496P)

Student Write-up

Short Summary of work done during PS-II: As interns, we were part of the growth and strategy team at Viacom18 Digital Ventures, taking up key initiatives to boost the growth and ultimately revenue of their consumer facing digital OTT platform - Voot. To satisfy this objective, the interns were involved in supporting some key initiatives taken by the Sales and the Marketing team - taking these from the initiation to their final completion. From creating Sales decks for important client meets to organizing the country's first digital media hackathon, the work ranged a gamut of activities.

Tools used (Development tools - H/w, S/w): MS PowerPoint, MS Excel, Mixpanel (analytics platform), BARC (TV Ratings software).

Objectives of the project: To plan and execute initiatives to grow VOOT (their OTT platform). Initiatives included growing user base, understanding user behavior to increase user retention on the app,

developing advertisement sales strategy to get potential advertisers on board, all leading to an increase in bottom line and top line.

Outcomes of the project: Following were the major outcomes of our work Consumer profiling- Developed rules to assign gender and age of over 10 million users on VOOT- leading to customized user experience and better personalized Ad targeting. Increased User retention- Analyzed user behavior- frequency and duration of viewing, time of the day when users visit the platform, when do users drop out, how do they navigate inside the app, which videos do they watch. This helped to identify the best UI/UX experience and replicate it to all users Ad Sales Strategy and Client Prioritization- Analyzed TV spending data- Overall Top Advertisers, Top Advertisers on HD channels, advertisers during Prime Time and other factors to come up with a list of potential advertisers that would be most likely to spend on VOOT.

Major Learning Outcomes: As a generalist, we got an overall view of the media industry, especially the rapidly growing digital media and OTT industry. As part of the client and vendor meeting, we learnt the soft skills of negotiation and corporate hard-balling to get deals done. On a hard skill level, Excel and PowerPoint were the primary tools in our arsenal.players across the globe than others. The cost and revenue breakup of multiple live events was analyzed. The second project was on market penetration of Viacom's television channels across Hindi market and Kannada market. The project mainly dealt with developing insights for Colors super which is not a successful property in the Kannada market. Several regional markets like Marathi, Bengali, Malayali and Telugu were analyzed and a strategic plan was thus developed.

Tools used (Development tools - H/w, S/w): BARC (Broadview and Research Council of India) Software, Microsoft Excel, and Microsoft PowerPoint.

Brief Description of working environment, expectations from the company: The working environment is very good. All the employees are very friendly and ever willing to play foosball! You closely work with the leadership team and get to work on projects that directly impact the company- a rare opportunity in

any of the PS stations. Work can times can stretch to midnight but in the end it's a very good learning experience. PPOs can be expected.

Name: Sanchay Bapat (2013ABPS353H)

Student Write-up

Short Summary of work done during PS-II: I was a part of the Corporate Strategy team at Viacom. I have worked on 2 projects during my PS. The first one was analyzing business strategies and agendas for profitable play of live entertainment business. The project required an analysis on how the live entertainment business is organized globally and what are the major points that differentiate key.

Objectives of the project: 1.To get a deep understanding for conducting profitable live events in India. 2. Developing key strategies for Colors Super in the Kannada market.

Outcomes of the project: 1. Focus on creating unique experiences for consumers and building fan communities. 2. Reducing the overlap of content between flagship channel and secondary channel.

Major Learning Outcomes: The major learning outcomes were the understanding of what is takes to conduct a successful and profitable live event and addressing the consumers by fan communities and throughout the year engagement. The second project taught me how different channels analyse the viewership behavior of people and decide their strategies such as scheduling of programs in the prime slot, according to consumer attraction.

Details of papers/patents: No scope of papers/patents.

Brief Description of working environment, expectations from the company: The working environment is totally one of a kind. The Corporate Strategy team directly reports to the CEO of Viacom18, Mr. Sudhanshu Vats, giving interns an excellent opportunity to meet some great people and make good network. The company promotes mutual cooperation and healthy environment for their employees. They truly believe in work with fun principle. Unlike other corporate, formals are not necessary. The team leaders are always approachable and always there to guide and mentor you.

Name: Shaunak Aggarwal (2013A1PS837H)

Student Write-up

Short Summary of work done during PS-II: As part of the Technology Strategy vertical of the Corporate Strategy team at Viacom18; our aim was to help the company advance, ahead of its present and future competitors, by leveraging the key emerging technologies. To achieve this goal, we needed to create internal awareness about the latest emerging technologies and assess their potential impact on the Media & Entertainment industry. As part of the team I researched and assessed a few technologies that they had already been working on like smart wearable, while suggesting a few of my own like 3D printing and artificial intelligence to help them develop a perspective on the potential next big global disruption. The challenge was to identify, from a multitude of technology options, the one which would provide sustainable and long term commercial returns for the company. I also received the opportunity to discuss the technology assessment with the Senior Leadership Team including the Group CEO of Viacom18 for designing and implementing specific pilots of Chat bots to build appreciation of the technology within Viacom18.

Tools used (Development tools - H/w, S/w): Power Point, Excel.

Objectives of the project: Identifying Emerging Technologies and Their Application in the Media and Entertainment Industry.

Outcomes of the project: Practical Pilot implemented at Viacom 18.

Major Learning Outcomes: Primary and Secondary Research skill, Stakeholder Management, Project Management.

Brief Description of working environment, expectations from the company: The thought that my work is path breaking and could make a huge difference to their business, drove me each day and made me work beyond the normal hours and on holidays.

PS-II Station: Zinnov Management Consulting Pvt. Ltd., Bangalore

Student

Name: Gautham M (2013A1PS515P)

Student Write-up

Short Summary of work done during PS-II: Multiple projects including making decks for specific research, data crawling, news tagging and analysis, ecosystem research etc.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Microsoft PowerPoint and Octoparse.

Objectives of the project: Analyse data obtained from the research team, generate insights and represent data in consumable forms for Zinnov's clients.

Outcomes of the project: A deep dive into specific market scenarios (classified) a deck that will be used by clients.

Major Learning Outcomes: Generating Insights, Data Analysis, Team work, exposure to corporate work life.

Brief Description of working environment, expectations from the company: Flexible working environment, really friendly co-workers and mentors. Company expects around 35-40 hours of work a week. 5-day week and located in one of the most happening places of Bangalore.

Name: Ishita Vaidya (2015H149296P)

Student Write-up

Short Summary of work done during PS-II: •Client: A large business and financial software company: Helped the client to sharpen the growth strategy and focus the efforts on winning large deals through a combination of Product Innovation strategy, Local Partnership strategy and strategy to build a skilled talent pool. Prepared competitor case studies, performed a fit-gap analysis and formulated initiatives to drive strategic programs.

•Client: American technology giant: Competitor and Service Provider Analysis developed a cost bench-marking model and performed market sizing exercise for service providers.Prepared presentations for the same. I was involved in overall vendor profiling inclusive of aspects like Capability Analysis, Talent Analysis and Skill Analysis and prepared reports on activities outsourced and preferred engagement models.

•Involved in ad-hoc assignments for Competitive Positioning, Benchmarking, and Company profiling for various clients.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Microsoft PowerPoint.

Objectives of the project: 1. Preparing competitor case studies performed a fit-gap analysis and formulated initiatives to drive strategic programs, 2. Vendor profiling.

Outcomes of the project: Confidential deliverables.

Major Learning Outcomes: Got to learn about frameworks and their application.How to do actual market sizing.

Brief Description of working environment, expectations from the company: 1. Small firm with haphazard structure. First month I wasn't given much quality work. I was made to find contacts/email IDs for their upcoming confluence event.

2. No structured policies, nothing is written. Company goals are absent. Rules are made instantaneously. The company doesn't know where they want to head. Zinnov has good projects with good clientele but there is still no stringent modus operandi.

3. Working environment is really bad and hence the attrition rate of 60%. People come and leave within two months. Job satisfaction is zero.

4. Company is running with the help of interns only.

Name: Mohit Saxena (2015H149270P)

Student Write-up

Short Summary of work done during PS-II: Pursued an intensive research on:

1. Technology disruption & the corresponding change in landscape.

2. R&D Footprint Tracking.

Tools used (Development tools - H/w, S/w): Excel, PowerPoint and Octoparser.

Objectives of the project: Analysis of Zinnov's Global Engineering Insights Platform, R&D Footprint Tracking.

Outcomes of the project: It is confidential as the research work was specifically based on Zinnov's client queries.

Major Learning Outcomes: Project helped in refining the deep dive analysis.

Brief Description of working environment, expectations from the company: 1.Mostly the work is related to data crawling.

2. There is no standalone project, instead there are multiple initiatives which caters to specific queries of Zinnov's clients.

3. Work experience is mix because most of the time parsing of the required research data is done from either Nuakri or LinkedIn portals which have no value addition. However, only if initiative is good than only it's requires in-depth analysis of different companies financials, annual reports etc, which helps in refining the understanding of target client dynamics.

4. Every initiative will be for sure being data intensive.

5. Working conditions are ok. They provide free lunch, have recently installed foosball & TT table and people here are pretty nice to interact with.flexibility and freedom to grow. They value innovations and look for logical additions to the already existent or upcoming solutions.

Name: Santosh (2013A4PS279P)

Student Write-up

Short Summary of work done during PS-II: Global ISV Deal tracking, Taxonomy Reasearch, Outsourcing capabilities of Software and Automotive firms.

Tools used (Development tools - H/w, S/w): Excel, Octoparse.

Objectives of the project: Opportunity tracking for Service Providers.

Outcomes of the project: Identified relevant fields that companies are looking to outsource.

Major Learning Outcomes: Structuring unorganised data and presenting it in an attractive manner.

Brief Description of working environment, expectations from the company: Pros.A friendly atmosphere where each person gets chance to exhibit his or her talent. The work types we receive in the company have so much of variety.

The quality of people employed in terms of knowledge makes up for an excellent work place.Overall a great company to work with.Friendly and cordial culture. Helpful seniors and colleagues, work life balance. Everyday there is a chance to learn something new.

Cons Nothing as such .overall everything is good. Only the food quality can be a little better.

Name: Ritina Roy (2015H149231P)

Student Write-up

Short Summary of work done during PS-II: The work has done mainly revolve around secondary research by either crawling data through various relevant websites or by Google searching. It was not a single project for the entire duration, rather a number of small assignments consisting of the work mentioned above. Overall, it was mainly data capturing through secondary research.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: Capturing relevant data for further research processes.

Outcomes of the project: Mainly databases of relevant data for further research or other purposes.

Major Learning Outcomes: An overview of the Automotive and ISV (Independent Software Vendors) Industries. (The data collection activities were mainly in these two verticals).

Brief Description of working environment, expectations from the company: The working environment is okay. Some colleagues were really good and helpful. Reimbursement policies and benefits are also good. However, the experience would have been better had the tasks provided were in sync with the MBA curriculum (my discipline at BITS) and a proper project was allotted as a part of the structured internship. One expectation from the company would be that it would put future MBA interns in consulting practices where the work would be relevant to some extent to their curriculum. Also, I hope it would look into its processes and methodologies and refine them so that effort wastage is minimized.

PS-II Station: Zinnov Management Consulting Pvt. Ltd., Gurgaon

Student

Name: Kaustubh Agrawal (2013A1PS736P)

Student Write-up

Short Summary of work done during PS-II: Data analytics, competitor strategy planning.

Tools used (Development tools - H/w, S/w): MS excel, PowerPoint, SQL.

Objectives of the project: Improve profitability for a client.

Outcomes of the project: In progress.

Major Learning Outcomes: About the digital industry and insights of strategy formation.

Brief Description of working environment, expectations from the company: Very pleasing to work.Lots of Bitsians.Positive environment.

Name: Shrishti (2013A1PS625G)

Student Write-up

Short Summary of work done during PS-II: Worked on multiple projects like making POVs (Point of Views on Fintech Landscape in Digital Payments and INDIASTACK), estimating the no. of housewife resellers in India for a startup called Meesho, Identifying the top franchise partners for major Apparel and automobile brands etc. Each project involved Primary calling, Secondary research and working on Excel, PPT etc.

Tools used (Development tools - H/w, S/w): excel and PowerPoint.

Objectives of the project: Market Research and analysis.

Outcomes of the project: Presentations and reports for the client in the above mentioned areas.

Major Learning Outcomes: Proficiency in excel and PowerPoint.

Brief Description of working environment, expectations from the company: Great working environment, particular about the work but otherwise friendly, amazing parties and dinners, fun-place to work.

Name: Shilpi Agrawal (2013ABPS212P)

Student Write-up

Short Summary of work done during PS-II: Worked full time on a client-facing project which was to estimate the number and commerce volume of online housewives re-sellers in India (Published in TOI on 1st June 2017). Worked on 3 major other client-facing projects in the sphere of digital transformation- IoT, AI, Automation related strategic engagements.Also worked on one of the Zinnov PoV about Digital presence of large Indian enterprises.

Tools used (Development tools - H/w, S/w): Data scraping and crawling tools- Octoparse, Parsehub, Data Miner, Import.io, Python etc.Excel Power Point and basic Google searching.

Objectives of the project: 1. Estimate the number and commerce volume of Online Housewives Resellers in India for 2017 and projecting them for 2022.

2. Digitally transform leading Clients and increase their revenue- Companies it can partner with, startups it can acquire, new product ideas according to the need of time, increasing productivity, building strategies by looking at the market and the kind and size of deals in that sphere.

3. Creating a deck- Zinnov Point of View about Digital presence (IoT, AI and Automation) of Large Indian Enterprises.

Outcomes of the project: 1. Insights of the market to the public or client

2. Digital Transformation

3. Increasing revenue, enhancing productivity.

Major Learning Outcomes: 1. Web Parsing tools like Octoparse, Python for parsing.

2. Microsoft Excel, Powerpoint- Creating decks, reports.

3. Soft skills- confidence, communication etc.

Details of papers/patents: Report published in TOI- http://timesofindia.indiatimes.com/trend-tracking/how-indian-smartphones-are-losing-out-to-china/articleshow/58926231.cms.

Brief Description of working environment, expectations from the company: Co-workers are majority BITSians and very understanding as well as friendly. The conversations with them make you learn a lot. They help you in whatever be the situation. The mentors and guides are extremely knowledgeable and guides quite tirelessly with their deep experience. They are there for all kind of doubts and queries. There is a Foosball table which helps to relax while playing in breaks. The lunch and evening snacks are good.

Domain: Electrical Electronics

PS-II Station: Aditya Birla Insulators, Halol

Student

Name: GAURAV DADHEECH (2015H106150P)

Student Write-up

Short Summary of work done during PS-II: 1. CFD modeling of Pug mill. 2. Barrel design analysis 3. New barrel development 4.Analysis of different failure methods 5. Solution of a failure named "Circular Crack".

Tools used (Development tools - H/w, S/w): ANSYS Polyflow.

Objectives of the project: CFD modeling of Pug mill.

Outcomes of the project: New Barrel developments, Reduction in Circular crack.

Major Learning Outcomes: ANSYS Polyflow, Product design, Root cause analysis.

Brief Description of working environment, expectations from the company: Projects are quite difficult here. You are expected to work as a consultant not as intern. Accommodation provided is good. Good learning opportunities. We get to know about the ceramic industry, which was a new experience for me. There is lack of support from mentors here. If your ideas are worthy company is willing to investment in them, even CEO meets the interns and takes input regularly. My proposal was accepted and new machine components were procured, which were quite expensive. Sometimes there is pressure of delivery. The plant is in remote place so after work life is non existent. To sum up it was a good learning experience.

Name: SUYASHDOSHI (2015H141110P)

Student Write-up

Short Summary of work done during PS-II: The metal parts are selected for optimization from the most used one using decision matrix. The worst case loading on the metal parts is simulated using commercially available finite element analysis software from selected parts. These metal parts are found to be over weighted so there is scope in weight reduction using optimization techniques. Shape optimization is used to identify initial shape for those metal selected parts and for optimization of that initial shape the optimization problem formulation, objective function, geometric parameters and constraints are identified and then using design explorer package, DOE is carried out for geometric parameters and its dependency over stress distribution. Base on results of DOE, best design is selected which have low weight as well as same load bearing strength.

Tools used (Development tools - H/w, S/w): Finite element analysis, Topological optimization, Design of experiments.

Objectives of the project: Metal parts design and optimization.

Outcomes of the project: Reduction in weight of metal parts by 15% and yearly cost savings of 1.2 M INR.

Major Learning Outcomes: Design of experiments, Optimization.

Brief Description of working environment, expectations from the company: Employees are supportive and helpful and new suggestions for improvements are always welcome here but the work flow is slow here. The work life balance is good and the station is a bit distinct from the main town.

Name: ANANT PATIL (2015H106139P)

Student Write-up

Short Summary of work done during PS-II: Increase the production capacity of H3 insulators by making continuous flow.

Tools used (Development tools - H/w, S/w): Value stream mapping.

Objectives of the project: Increase H3 insulator production capacity from 40 to 55 insulators per day.

Outcomes of the project: De-bottlenecking of Electric dryer.

Major Learning Outcomes: Capacity calculation of each section.

Brief Description of working environment, expectations from the company: There should be guidance from company side also. As an intern, everything is new for us, so there should be one person who should guide us.

PS-II Station: Aditya Birla Insulators, Rishra

Faculty

Name: Srinivas Kota

Comments: Interns need to be thorough in their basics and should be proficient in modelling and analysis of real problems. They should be able to design experiments to collect data and then analyse the collected data using appropriate tools. Interns should be able to quickly learn the required tools and contribute by solving the given problems quickly.

Student

Name: ASHWINI KUMAR (2015H106147P)

Student Write-up

Short Summary of work done during PS-II: My Project title was "Semi-Automation in Material handling to reduce workforce and cost". About 80% of the industry is manually operated,so there is a lot of scope for automation.The challenging job is to automate it with minimum investment.I have worked on glazing machine,(manually operated),and upon slide structural modification, one of its important part of glazing is automated which improve quality and eliminates workforce. I have also contributed effectively in material handling tools by modifying hydraullic pallet trolley and also contribute to their moisture problem.

Objectives of the project: Semi-Automation in Material handling to reduce workforce and cost.

Outcomes of the project: (i) Glazing machine was modified structurally and hence automates the glazing process. (ii) Ease in Material handling by modification of hydraullic pallet truck, which reduces worker fatigue and reduces chances of accidents. (iii) Proposed an alternative pipeline layout to implement it, in order to increase the quality of material. (iv)Reusing of a common non-biodegradable material of industry to help against moisture problem.

Major Learning Outcomes: Learned about the entire process of insulator manufacturing, different machines used in the industry, different challenges (environmental, economical, union norms).

Brief Description of working environment, expectations from the company: Working environment is not good as expected from Aditya Birla Group. Hardly few engineers are there in the industry, and mostly from ceramic background so there is a wide gap in technical knowledge which is required a lot.The entire industry is worker governed and to work in PS from implementation point of view is a challenging thing. There is always a resistance for a change especially when it is for a good cause. So we faced it heavily from workers point of view.It is a ceramic industry, so it’s hard to get through it when we are from mechanical background. The work I have done was appreciated by the CEO of the company (BITS Alumni).

Name: AVINASH KUMAR (2015H142129P)

Student Write-up

Short Summary of work done during PS-II: This project aims at comprehensive study of the existing layout of the ABI, Rishra plant, finding the scope of improvements in the layout in different functional departments resulting in the reduction of the man and material movement, proper utilization of the man power, decrease in the product rejection rate, decrease in the cycle time, better housekeeping and ultimately overall cost reduction.

Tools used (Development tools - H/w, S/w): AutoCAD.

Objectives of the project: Comprehensive Study of Existing Plant Layout and Developing Proposals for Efficient and Effective Layouts.

Outcomes of the project: Implementation of new proposed layout in two of the selected project area.

Major Learning Outcomes: Working in co-ordination with more than four departments at a time to get the job done, Real time technical issues leads to a better and clear picture for making new changes.

Brief Description of working environment, expectations from the company: I would appreciate the ABI unit head for providing us an individual mentors, experts in their domains. He guided and helped me at every moment in every required improvement in successive simulations of the proposed layouts throughout the PS-II. The management supported us well in all respects i.e. accommodation, fooding, stipend on time, support from all departments for implementing the proposed layouts.

Name: SIDDHARTH A (2013ABPS586H)

Student Write-up

Short Summary of work done during PS-II: PS project was related to Optimization of Die press Operations in ABI Rishra plant.

Tools used (Development tools - H/w, S/w): Creo, Solid works, MS Excel.

Objectives of the project: To reduce scrap and improve productivity.

Outcomes of the project: Productivity improved by 5.1 % by reducing and optimizing scrap at each step of die press Operations.

Major Learning Outcomes: Professional workplace is very different from academics. I learnt to get work done on the floor by collaborating with fellow employees and workforce on the shop floor.

Brief Description of working environment, expectations from the company: Please give projects which can be completed in the given time frame work and are analytical, technical in nature.

PS-II Station: Analog Devices - Design and Simulation, Bangalore

Faculty

Name: Gyanan

Comments: Course requirement: Digital System, Digital Signal processing, Computer architecture, Embedded system, VLSI design and verification, Communication network, Machine learning.

Skills (Hardware & Software): a) System Verilog, C, Cadence virtuso, shell scripting, visual studio, SPICE, Python, perl, spectre.

Student

Name: VISHNUVARDHAN IYER (2013AAPS049H)

Student Write-up

Short Summary of work done during PS-II: My work was to initially develop python based drivers for various measuring equipments for device characterization like oscilloscopes, network analyzers, temperature stream, supplies etc. Each equipment involved a demo from the manufacturers- Keysight, Agilent and Tektronix etc. The idea was to remote control all these instruments and use test scripts and run all tests without having to manually control any instrument. The second half of the project was to develop new test scripts or change existing ones, test them and post process data to get the outputs in a presentable format.

Tools used (Development tools - H/w, S/w): Measuring Equipments- scopes, analyzers, function gens. Software- Python and Labview.

Objectives of the project: Developing an environment for testing devices.

Outcomes of the project: Tested sample device successfully and most of the standardized tests passed.

Major Learning Outcomes: New test equipments, Novel testing methods in Eval boards and some basic layouts.

Brief Description of working environment, expectations from the company: A very good environment for a student intern .Friendly and coworkers and mentor.People always available to help if you are stuck. Work depends on the profile given. My work was mostly testing and characterization but in the process of my work I understood a lot about my Eval Board as different parts of the board are used for different tests. Good company if one wants projects in the analog domain. No real work pressure as such.Ideal work experience for people pursuing jobs in this domain.Hard to get jobs as it depends purely on vacancies. Note that my project has been closed so it may not be available next semester but similar design and verification projects are always there. There may also be some project related to image processing and machine learning. In short a very good experience.

Name: JAV VAJI BALA VENKATESH (2013AAPS261H)

Student Write-up

Short Summary of work done during PS-II: OK.

Tools used (Development tools - H/w, S/w): Perl and shell.

Objectives of the project: Good.

Outcomes of the project: Angle measurement.

Major Learning Outcomes: Understanding Analog devices.

Brief Description of working environment, expectations from the company: Good.

Name: AMBAREESH S J. (2012B3A8561G)

Student Write-up

Short Summary of work done during PS-II: Digital Verification tasks for projects for Automotive Safety Group division of ADI.

Tools used (Development tools - H/w, S/w): Cadence Simvision, System Verilog and Python.

Objectives of the project: Verification of Project using SV and UVM, Setting up of a CI Tool for the projects.

Outcomes of the project: Verification tasks were completed successfully, CI tool successfully setup.

Major Learning Outcomes: Learned concepts of OOP, Debugging of digital design, use of SV, and UVM.

Brief Description of working environment, expectations from the company: Healthy work environment and an encouraging team.Helpful mentor and colleagues. Project work was challenging and engaging at the same time.

Name: P ANANTHA SAI RAM (2013AAPS210H)

Student Write-up

Short Summary of work done during PS-II: I was part of the Processor Applications Team (IPDC-APPS) at Analog Devices. My project helped me gain knowledge and experience while working on ARM based Embedded Processors and their Applications, and learned about the finer details of the execution of these processors. I learned to work on various development platforms for Embedded System Design for Application Development purposes. Major part of my work comprised the verification of the device drivers provided in the Board Support Package (BSP) of ADuCM3029 microcontroller. This helped me get my hands on various system peripherals like GPIOs, UART, SPI, RTC, CAN, WDT, etc. My work also involved the testing of the newly developed SSL/DD CAN driver for ADSP-SC589 ARM/SHARC processor. In this assignment, I developed test cases to examine and ensure the proper implementation of various features of CAN.

Tools used (Development tools - H/w, S/w): IAR Embedded Workbench, CrossCore Embedded Studio.

Objectives of the project: Device driver porting and and verification.

Outcomes of the project: Verified the Device drivers of ADuCM3029.Verified the Ported SSL CAN driver.

Major Learning Outcomes: Better understanding of the system peripherals, improved my Debugging skills while working on various issues on device drivers.Learned to develop applications using device drivers.

Brief Description of working environment, expectations from the company: My PS-II experience at Analog Devices, Inc. has been a fantastic learning experience which helped me gain technical exposure towards Embedded System Design, from the perspective of the semiconductor industry. In addition to enhancing my technical skills, the work culture here has given me a taste of the professional work culture in industry. I could work comfortably on my project, thanks to the flexible working hours and helpful employees. Overall it was a great experience and I thank ADI and the Practice School Division, BITS Pilani for giving me this wonderful opportunity.

Name: PRANAV KUMAR (2013A8PS496G)

Student Write-up

Short Summary of work done during PS-II: The aim of the project is to find out how a linear voltage to current converter circuit behaves under different conditions maintaining its property of linearity. The property of linearity makes this circuit significant as linear circuits can process analog signals without intermodulation distortion.

Tools used (Development tools - H/w, S/w): Cadence Virtuoso, Spectre.

Objectives of the project: Design and simulation of sub blocks in adux1060.

Outcomes of the project: Sub blocks were successfully designed and simulated.

Major Learning Outcomes: Learned about mixed signal design aspects. Get to learn about the signal chain in chip design.

Brief Description of working environment, expectations from the company: Working environment is pretty good. It actually depends on the mentor and team in which you are in. I got a lot of help from my mentor but it's not the same case with everyone. PPO chances are very rare here.

Name: Chandrahas Tirumalasetty (2013AAPS242H)

Student Write-up

Short Summary of work done during PS-II: Functional & Design Verification of JESD204 Communication Interfaces of High-Speed Data-Converters.

Objectives of the project: To verify the design at Design under Test (DUT) at various hierarchical levels and in case, if any test-fail is encountered, debugging is done by wave-form examination & tracing back the signals.

Outcomes of the project: Solving the issues & test failures of the desired product.

Major Learning Outcomes: Verification Methodology & System Verilog Language.

Brief Description of working environment, expectations from the company: Here at ADI, The work environment is really flexible. Your performance is assessed by the progress you made and task you had accomplished rather than time you spent in office. Project Manager are really understandable people, they are willing to let you a helping hand in case you need. But one thing, that's not quite satisfactory in my opinion is the type of work they give to the interns, most of the time it is not really exciting or thought provoking.

PS-II Station: ARM Embedded Technologies Private Limited, Bangalore

Mentor

Name: Chandrakumar A

Designation: Senior Software Engineer

Comment: a. Work done by the PS-II students: Till now he is progressing well as per the project plan.

b. Interactions with him/her: He is a quick learner and eager to learn new things. He is having very good communication and presentation skills.

c. Highlights of major achievements (if any): Came up with impressed design for the problem given to him.

d. Outstanding student characteristics (if applicable): Understood the problem very well.Very good presentation skills.Excellent communication skills.

e. What do you look for in interns: It might vary from team to team.With respect to our team: i. Exposure to Object Oriented Programming (OOPs) would be great. ii. Little bit of working experience in Linux (Operating System).

Name: RADHA GOVINDARADJOU

Designation: Consultant

Work done by the PS-II students: Kanchiâ€™s work has been remarkable and he has been independent in most of his work. Interactions with him/her: Interaction with Kanchi has been quite good. He always asks up right questions and always seems eager to understand practical architecture details. Highlights of major achievements (if any): Kanchi was able to handle few trick debugs all by himself; when few issues required interaction with cross-teams, he was able to manage it quite easily. Outstanding student characteristics (if applicable): Hunger for knowledge.

Faculty

Name: Swapna Kulkarni

Comments: As each project has different significance and required different areas knowledge, students are working in areas like Motherboard chipsets, Network interface controllers and integrated circuits, Flash memory, Embedded processors, Software development, Biomedical Signal processing, Verification and Validation, Testing and Digital Image Processing and many more. Industry is looking for interns who have strong knowledge in basics of circuit /control theory, DSP and cmos semiconductor,Excellent scripting skills in matlab/python as well as other programming languages like java, c and Embedded C. Students can be prepared in the specified areas with the help of training and tutorials available from Industry before start of their PS II as well as during their internship.They can approach to their PS faculty as well mentors in PS II stations to get the access of necessary material. Students can also avail the facility of training in their PS II stations to learn new technologies.

Student

Name: KANCHI HARI MANIKANTESWAR REDDY (2012B3A3518G)

Student Write-up

Short Summary of work done during PS-II: I worked on validating the memory suites on all partner's targets with new page table tool through a methodology lay out by my manager.

Objectives of the project: To validate memory architectural suites with a new page table tool.

Outcomes of the project: Successfully deployed the changes to partners.

Major Learning Outcomes: Arm memory architecture, Perl.

Brief Description of working environment, expectations from the company: Work environment is stress free and the people are very helpful.

Name: VISHNU PRIYA BITRA (2013A3PS366H)

Student Write-up

Short Summary of work done during PS-II: My work is related to pre-silicon System Performance analysis using standard industry benchmarks and SPEC 2000 benchmarks. It needs knowledge of computer architecture especially cache related concepts. I was also given a project on post processing scripts in perl.

Tools used (Development tools - H/w, S/w): perl,Linux.

Objectives of the project: To test and analyse the performance of given systems.

Outcomes of the project: The scores of the tests and the issues that are pointed out.

Major Learning Outcomes: Learnt the industrial application on computer architecture and scripting language, perl.

Brief Description of working environment, expectations from the company: Working environment in ARM is very good. There is no pressure and sufficient time is given to understand and proceed forward through issues debugging. The teams here are very helpful. It will be helpful if the intern is a part of on-going projects instead of side projects so that the experience can be useful in future.

Name: ANAND PRIYADARSHAN NAIK (2013A8PS362G)

Student Write-up

Short Summary of work done during PS-II: Development of a Java Utility to convert cell data from the LVF to AOCV file format. Work involved knowledge of Java and Object Oriented Programming.

Tools used (Development tools - H/w, S/w): Software - Java programming language, Shell scripting, etc.

Objectives of the project: To create a utility to convert LVF to AOCV file formats.

Outcomes of the project: Utility successfully made and tested.

Major Learning Outcomes: 1) Improved understanding of object oriented programming 2) Got relevant exposure to working in a VLSI company. 3) Understood protocols and conventions followed with use of EDA software.

Brief Description of working environment, expectations from the company: Work environment very conducive to learning.Achievable targets and healthy work pressure.Regular feedback sessions with intern and manager.

PS-II Station: Capillary Technologies - Testing Automation, Bangalore

Faculty

Name: Uma Maheswari Natarajan

Comments: Students should be from CS background or have done good electives in Computer Science.

Student

Name: UDAY SAI JAGANNADH NANDIPATI (2012B3A7669H)

Student Write-up

Short Summary of work done during PS-II: I was responsible for improvements/modifications in the event management framework of the company's web application. It involved UI Enhancements and feature development.

Tools used (Development tools - H/w, S/w): PHP, JAVA, JS, JQUERY, HTML, CSS, GIT, SVN and ECLIPSE.

Objectives of the project: UI Enhancements and feature development for the event management framework.

Outcomes of the project: Support for mobile-push notifications in the company's web module, UI enhancements to the web app.

Major Learning Outcomes: Coding style, Software development workflow.

Brief Description of working environment, expectations from the company: In Capillary, you will never run out of work to do, just like in any startup. So it could be hectic some times, but it gets fine once you get a grip over your work. Flat culture and really helpful and friendly people. Team dinner outings once in 2-3 months, free food, free cab facility after 8 pm, are the worth mentioning perks.Got to learn lots of stuff in and around product development.

PS-II Station: Central Electronics Engineering Research Institute, Pilani

Faculty

Name: Pawan Sharma

Comments: CSIR-Central Electronics Engineering Research Institute (CSIR-CEERI), Pilani is a premier research Institute in the field of Electronics, established in 1953 under the aegis of Council of Scientific & Industrial Research (CSIR). It is devoted to R&D activities in three areas, namely: (1) Cyberphysical Systems (2) Smart sensors (3) Microwave Tubes. All the students worked on applications of machine learning. The first one was maintaining water quality measures and the other on facial feature extraction. The project required students to have done course on image processing, FPGA design, coding of machine learning algorithms using Matlab and C/C++ and final implementation on FPGA using Verilog. The projects are on-going and hopefully would be continued in the coming semester. The students have proven their abilities in effectively carrying out the assigned projects. The mentors were satisfied with the quality of the work carried out by them.

Student

Name: DHAWAL HARKAWAT (2013A7PS046P)

Student Write-up

Short Summary of work done during PS-II: I did ML Algorithms for predicting the concentration of Important Anions in River Water, and also qualitatively judging the quality of water, based on the predicted variables. I did all the Regression modelling, Classification, and Clusterization on the RIver water Proprietary data to do the Water Quality Analysis. Feature Engineering along with data imputation was required because the data set had missing parameters required for modelling. Algorithms like KNN, Random Forest, SVM; K-Means clustering was used in the successful completion of the project. The results obtained out of the project are also quite satisfactory.

Tools used (Development tools - H/w, S/w): Python Programming, R Scripting, ML Libraries, and Mathworks Matlab.

Objectives of the project: Applying Machine Learning techniques for getting better accuracy of the predicted Variable concentration of anions.

Outcomes of the project: Regression modelling - for quantitative purposes - accuracy ~75%, Classification modelling and clustering - qualitative purposes - accuracy ~ 90%. Overall the results were impressive and had good accuracy.

Major Learning Outcomes: Major Learnings were Applying ML algorithms theoritically learned via lab problems, and applying them into real world scenarios. Learning Python programming, and R scripting, with Machine Learning libraries. Team work and keeping up with the project timelines.

Brief Description of working environment, expectations from the company: Working environment was good, with a lot of projects to be chosen from, students were given the previlige to choose the project depending upon his/her interest. The mentor was also very supportive and gave enough material to learn from, also during any part of project - he was ready to help and gave his guidance. Overall, I think I learnt a lot from him, and from the project that I worked on. Just keep the pace with the project timelines, and deadlines, it will be a great journey.

Name: SHAISTA HUSSAIN (2013A3PS322P)

Student Write-up

Short Summary of work done during PS-II: Designed a module to recognise facial expressions.

Tools used (Development tools - H/w, S/w): PHP, JAVA, JS, JQUERY, HTML, CSS, GIT, SVN and ECLIPSE.

Objectives of the project: UI Enhancements and feature development for the event management framework.

Outcomes of the project: Support for mobile-push notifications in the company's web module, UI enhancements to the web app.

Major Learning Outcomes: Coding style, Software development workflow.

Brief Description of working environment, expectations from the company: In Capillary, you will never run out of work to do, just like in any startup. So it could be hectic some times, but it gets fine once you get a grip over your work.Flat culture and really helpful and friendly people. Team dinner outings once in 2-3 months, free food, free cab facility after 8 pm, are the worth mentioning perks.Got to learn lots of stuff in and around product development.

PS-II Station: Cypress Semiconductor India Pvt Ltd., Bangalore

Faculty

Name: Gyanan

Comments: Course requirement: Digital Design. VLSI design and verification and Mixed signal verification, Supply chain management, manufacturing and logistics.

Skills (Hardware & Software): a) System Verilog, C, Cadence virtuso, shell scripting, visual studio, Python, perl, Questa Sim,VMS,,OVM, UVM.

Student

Name: PRADIPTA BANDYOPADHYAY (2015H124069P)

Student Write-up

Short Summary of work done during PS-II: My main work was focused on two parts. Firstly i had to prepare a PCB layout for one of Cypress's clock devices programming kit. It was a daughter card with a socket that will be used to program a particular Cypress Clock family. My second part was testing of another programming/ Evaluation kit Cypress has created to support its legacy parts.In all there were 3 different kits. I had to program using all 3 boards while subjecting the programmed parts to stress and failure mode testing along with the board itself.

Tools used (Development tools - H/w, S/w): Cadence-PCB Editor, Clock Programmer and C.

Objectives of the project: Te develops a new programming Kit and verify its functionality.

Outcomes of the project: The new Kits have been manufactured.

Major Learning Outcomes: Designing PCB, Testing and verifying parts.

Brief Description of working environment, expectations from the company: Working Environment always gives good vibes. It is very calm yet very composed and focused and has a structure to it. In terms of progress Cypress has just launched its 3.0 campaign with a lot of initiative to enter and compete in markets it earlier did not compete in. There is some promising work going on in the IOT sector Cypress acquired.In general it focuses on its memory and MCU products. Prospects seem good for the company but also next 2-3 years will be crucial for the company. In all it is a good company to learn and work for.

Name: AJESH SUSEEL (2015H123158P)

Student Write-up

Short Summary of work done during PS-II: Design of 1.8 V I/O Buffers using 1V Transistors.

Tools used (Development tools - H/w, S/w): Cadence Virtuoso.

Objectives of the project: To check feasibility of designing HV buffers using LV transistors.

Outcomes of the project: Designed a feasible architecture which met specifications across PVTs.

Major Learning Outcomes: Tools-Adel and Adexl environment of Cadence.

Brief Description of working environment, expectations from the company: The working environment was excellent with good support from the team.Interns were involved in all meetings to understand nature of actual projects.The attitude of the employees to questions and doubts was very positive. The facilities and access given to inerns were on par with actual employees. The company expected to make use of the work done by interns to reduce time when actual employees start the work. The company required interns to do wide literature survey, and come up with possible working models.

Name: DEEPAKKOHAT (2015H142127P)

Student Write-up

Short Summary of work done during PS-II: Supply Chain and Planning.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Understand Supply Chain and do planning for AM business.

Outcomes of the project: Effective planning for customer orders.

Major Learning Outcomes: Excel and Supply chain concepts.

Brief Description of working environment, expectations from the company: Good work culture.Easy transition from classroom to cubicle. Expect company to help understand the business by provide good knowledge about the business opportunities.

Name: KRUTHIK SIDDESWARAPPA SUNANDA (2015H123035G)

Student Write-up

Short Summary of work done during PS-II: Worked on the verification project of the Core IP of Cypress.This project involved creating testbench using UVM.

Tools used (Development tools - H/w, S/w): Questa sim.

Objectives of the project: To learn UVM and get familiar to the Cypress team.

Outcomes of the project: Project completed using UVM.

Major Learning Outcomes: learnt UVM, system verilog and corporate etiquette.

Brief Description of working environment, expectations from the company: Cypress has a very friendly working environment.I was comfortable working here and everyone in the company irrespective of the team was ready to help in case of doubts. Best company to work with.

Name: RAVISHEKHDA (2015H140116P)

Student Write-up

Short Summary of work done during PS-II: During my internship at Cypress Semiconductors, Bangalore I was part of NPD-Verification team. The initial part of the internship mainly consisted of learning Verilog-AMS, Verilog-D, Real Value Modeling (RVM) and Analog and Mixed Signal (AMS) Verification Methodology. Also I completed lot of Cypress online trainings. Later I was part of live project "Verification of SRSS Hard IP of PSoC-6". During the initial phase of project, I learned AMS Verification flow using AMUXBUS Splitter Cell (Module of IOSS Hard Core IP), I developed behavioral model for AMUXBUS Splitter Cell and verified that model and Hard core module using TB. After that I have started working in live project (Verification of SRSS Hard IP of PSoC-6). In live project, I have developed behavioral models (Power On Reset , Brown-Out Detector , Reference Generator, Active Low Power Regulator, Deep Sleep Regulator, etc…) of SRSS Hard core IP in RVM using Verilog-AMS, as well as verified those all model and Hard core IP at block level using TB (Written in Verilog-AMS).After that also perform coverage analysis.

Tools used (Development tools - H/w, S/w): Cadence Virtuoso, Cadence AMS Simulator.

Objectives of the project: Behavioral Model Development/Verification and Behavioral vs Schematic Verification of Hard Core IP (SRSS) of PSoC-6.

Outcomes of the project: Verified Hard Core IP of PSoC-6 at Block Level.

Major Learning Outcomes: Analog and Mixed Signal Verification Flow, Verilog-AMS.

Brief Description of working environment, expectations from the company: Overall, the experience as an intern in Cypress was quite amazing, it was challenging of course, but I learned a lot of things, performed various tasks, understood how Electronics Core industry works, and definitely I have improved upon my skills.

Name: JAY SHANKARBHATT (2015H106143P)

Student Write-up

Short Summary of work done during PS-II: Database automation for Open orders, Backlog, Projection and assembly start files.

Tools used (Development tools - H/w, S/w): VBA and VBS.

Objectives of the project: Automating work to reduce working time.

Outcomes of the project: For algorithm to reduce 1 hrs.Working time daily.

Major Learning Outcomes: VBA and VBS scripts.

Details of papers/patents: Can not reveal company policy.

Brief Description of working environment, expectations from the company: Very professional environment.

PS-II Station: Infinera - Embedded Software Testing, Bangalore

Student

Name: SHEENA ANEES KHAN (2013A3PS682G)

Student Write-up

Short Summary of work done during PS-II: During my internship I was involved in the Business as usual activities like validating signing off of Value at Risk of the organization, analyzing the process/technical issues which affect the quality of risk and creating reports for the higher management.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: To do a Root cause analysis of the issues causing stale risk in the Equity Business and studying exceptions report in IRC business.

Outcomes of the project: 1. Helped in creating a KPI to track the quality of risk measurement in Equity business 2.Was responsible for clearing out exceptions in IRC non linear trade data.

Major Learning Outcomes: To understand the process of Market Risk measurement and various KPI to assess the the quality of risk.

Brief Description of working environment, expectations from the company: Working in Market Risk Control team in DBOI Mumbai one definitely learns a lot about the Risk management field. You get to interact with highly knowledgeable professionals with varying academic backgrounds, each excelling in their own field of work. Apart from it more importantly you get a flavour of the corporate life and learn a lot about organizational psychology. However the work here is more process oriented in nature and work related learning is not much.

Name: PRATHIKSHAA RANGARAJAN (2013A3PS394H)

Student Write-up

Short Summary of work done during PS-II: Worked in Software Division of the company - Part of Software Tools Team.Patient Mentor and extensive learning opportunity.Worked on multiple projects which introduced me to various technologies. 1) "Outlook to JIRA" 'JIRA' platform REST API - Perl Script for automatic ticket creation from mail 2)"Coverity Updater" 'Coverity' SOAP services using XML - Perl web app to update attributes of multiple CIDs (Coverity Defects) 3) "Perforce Merge Tracker Tool" - Perl web app to track merges in 'Perforce' and automated reminder mailing system - Major project on which most time was spent. Extensive in-house tool built for company.

Tools used (Development tools - H/w, S/w): S/W: Perl, HTML, JavaScript, CSS, Bootstrap, jQuery.

Objectives of the project: Perl Scripting and Automation; Web Applications for end users.

Outcomes of the project: Tools released - Production stage.

Major Learning Outcomes: Web Development, Automation using Perl Scripting.

Brief Description of working environment, expectations from the company: Friendly work environment. Company has two divisions - H/W and S/W. However, both will involve some form of scripting/coding work albeit in different areas. H/W has requirements in Python which revolve around some of their H/W products/components testing and analysis. Software has opportunities for Java/Python/C++ apart from Perl Scripting. S/W Tools team may also have requirements for VBA scripting.

PS-II Station: Intel India Technology Pvt. Ltd. - VLSI Design, Bangalore

Student

Name: VIJITH K V (2015H123152P)

Student Write-up

Short Summary of work done during PS-II: I worked on RDT flow(RTL to GDSII),which involve both logical and physical synthesis.In logical synthesis,RTL description of a digital design is converted into technology dependent netlist satisfying the constraints specified.It mainly involves optimization and mapping to technology library.In physical design,technology dependent netlist is actually mapped into silicon area.It mainly involves floorplan,placement & routing and clock tree synthesis.I also done some scripting tasks in tcl language for obtaining much customized reports from the tools used.

Tools used (Development tools - H/w, S/w): DC compiler and IC compiler.

Objectives of the project: complete flow of mapping of RTL description of digital circuit block to silicon area after meeting all constraints specified.

Outcomes of the project: obtained constraints satisfied silicon mapped digital circuit block.

Major Learning Outcomes: I understood the various stages involved in both logical and physical synthesis.I learned various optimization strategies such as boundary optimization,auto ungroup and register retiming and how they effect constraints trade off.I also familiarised with power reduction strategies such as clock gating,xor self gating and use of multi threshold voltage libraries.

Brief Description of working environment, expectations from the company: intel is a great place to work for intern as they give all facilities similar to permenant employees.people are friendly and are ready to clear the doubts and correct the mistakes whenever required.In some extent,they provide work based on our intersts and choices.it also provides entertainment such as good games room and health related gym,medical clinic and yoga room.it also provide good quality and all variety food.stipend amount is more than enough for all expenditure.

Name: SANIKA Y PHATAK (2012B1A8551G)

Student Write-up

Short Summary of work done during PS-II: I worked in the CCG team of Intel on a BCI project. It involved using Machine Learning Techniques to train a model for eyeblinks detection and mental commands using EEG signals of the brain.

Tools used (Development tools - H/w, S/w): MATLAB, C/C++, C#, Unity, Visual Studio.

Objectives of the project: Main objective was to integrate the mental commands into gaming.

Outcomes of the project: The Mental commands were successfully integrated with small games.

Major Learning Outcomes: It was a very interesting and knowledgeable experience. My mentor was very supportive and helped me as and when required. Got to learn a lot in the upcoming field of Machine Learning and it finally gave a direction to my career.

Details of papers/patents: 2 patents filed, 2 papers under review.

Brief Description of working environment, expectations from the company: The work environment at Intel is very nice. You get to work at your pace and learn a lot. The projects and the way of work varies from team to team. You get many privileges as an employee at Intel. Intel takes care of their employees. My overall experience was amazing.Was lucky enough to get the projects of my interest.

Name: RAJEE GUPTA (2012B1A8736G)

Student Write-up

Short Summary of work done during PS-II: Verification of GBB module.

Tools used (Development tools - H/w, S/w): Simvision.

Objectives of the project: To verify the module and check the code coverage.

Outcomes of the project: Verification is an important part, because you are checking if your design is matching with your test cases written or not. After verification it is ready for power optimization and physical design. So here the outcome was to make the code coverage 100%.

Major Learning Outcomes: Learned about the simvision tool.

Details of papers/patents: 2 patents filed 2 papers under review.

Brief Description of working environment, expectations from the company: Intel has a great culture, very helpful employees and you get to know about so many other domains, the research, the software, the technology they are using.

Name: ABUTURAB MOHAMMADI (2013A8PS437G)

Student Write-up

Short Summary of work done during PS-II: Worked on power calculation and optimisation for Intel's graphics ip.Worked on few designs also for the cache controller of Intel's graphics ip.

Tools used (Development tools - H/w, S/w): Power artist, system Verilog.

Objectives of the project: To optimise the power consumption in their gen12 graphics ip for the cache controller.

Outcomes of the project: Successfully lowered the power consumption for a lot of the sub units. Made design changes to a few units to lower get count and increase performance.

Major Learning Outcomes: System verilog, working of GPU, VLSI industry design flow.

Brief Description of working environment, expectations from the company: The working environment is very nice. They encourage you a lot. If you show interest they will be very helpful. It took a little time to understand the flow and to learn how their system works, but the team is very enthusiastic in their approach to teach you. Although the material available on the company site is not very helpful but the team members make it easy for you.

Name: MALATHI GOTTAM (2013AAPS290H)

Student Write-up

Short Summary of work done during PS-II: Developed optimized assembly code from reference C code of different modules in the 2G firmware. Target optimization of available reference C code using synopsis provided APIs to get better performance & code size.

Tools used (Development tools - H/w, S/w): Synopsys ARC Metaware, CEVA ToolBox IDE.

Objectives of the project: To optimize the reference code of 2G firmware modules for better performance.

Outcomes of the project: Optimized the code of 2G firmware modules and obtained desired performance and enhanced efficiency.

Major Learning Outcomes: Advanced C, Assembly level programming, fixed point arithmetic (FXAPI), optimization algorithms, DSP architecture for modem in 2G, batch scripting.

Brief Description of working environment, expectations from the company: Working environment here is quite lively and encouraging. Employees nearby my cubicle are always involved in discussing some new ideas and working their way through everyday technical problems with hard work and integrity. I got to learn a lot from them. All my colleagues were really helpful in solving my doubts once approached. I worked in mobile communication department of Intel. So, basic knowledge of communication networks and systems, computer architecture and C is necessary to cope up with the projects allotted in this department.

Name: SHARVARIDESHMUKH (2013A8PS460P)

Student Write-up

Short Summary of work done during PS-II: I developed optimized assembly code from reference C code of different modules in the 2G firmware. I also did target optimization of available reference C code using synopsis provided APIs to get better performance & code size. The API was based on fixed point arithmetic.

Tools used (Development tools - H/w, S/w): Synopsys ARC metaware, Ceva ToolBox IDE.

Objectives of the project: To optimize the reference code of 2G firmware modules for better performance.

Outcomes of the project: Optimized the code of 2G firmware modules and obtained desired performance and enhanced efficiency.

Major Learning Outcomes: Advanced C, Assembly level programming, fixed point arithmetic (FXAPI), optimization algorithms, DSP architecture for modem in 2G, batch scripting.

Brief Description of working environment, expectations from the company: Working environment here is quite lively and encouraging. Employees nearby my cubicle are always involved in discussing some new ideas and working their way through everyday technical problems with hard work and integrity. I got to learn a lot from them. All my colleagues were really helpful in solving my doubts once approached. I worked in mobile communication department of Intel. So, basic knowledge of communication networks and systems, computer architecture and C is necessary to cope up with the projects allotted in this department.

Name: Vibha Nasery (2012B2A8639G)

Student Write-up

Short Summary of work done during PS-II: I modelled the wireless communication channel in MATLAB and using the method of compressive sensing, estimated the sparse channel.

Tools used (Development tools - H/w, S/w): MATLAB.

Objectives of the project: Sparse channel estimation.

Outcomes of the project: Reconstruction of the sparse wireless channel frequency and impulse response.

Major Learning Outcomes: MATLAB, Compressive sensing.

Brief Description of working environment, expectations from the company: Working environment is very nice and comfortable. My mentor was very helpful.

Name: KUNA ASHOK KUMAR (2015H123155P)

Student Write-up

Short Summary of work done during PS-II: Initially I worked to create test benches for LDO, designed by other people. In middle model files got changed i.e., I designed the LDO to satisfy the spec. Learning wise, I learned lot how to fix DC operation of the chip and how to meet other specs of the chip such as Power supply rejection(PSR), Line and Load regulation etc.

Tools used (Development tools - H/w, S/w): Cadence Virtuoso.

Objectives of the project: Sparse channel estimation.

Outcomes of the project: Design and testing of 0.9V Low Dropout (LDO) Regulator.

Major Learning Outcomes: Analog IC Design Techniques.

Brief Description of working environment, expectations from the company: The working environment here in Intel is very good. Colleagues are helped a lot throughout the internship. Company expectation from a fresher is very less, they look for the guys who are showing interest in work and how they are meeting the deadline of the project. In one line if i say, they see how much you pay interest towards is matter nothing else. Overall the internship is very satisfactory.

Name: NALIN MUJUMDAR (2013A3PS298P)

Student Write-up

Short Summary of work done during PS-II: Created a test bench for jitter analysis of circuit, System level Simulink model of a CTLE circuit and PRBS jitter generator.Learnt about need for jitter analysis in modern circuits, techniques for jitter measurement and control and the jitter decomposition model and a programmable CTLE circuit.

Tools used (Development tools - H/w, S/w): Cadence Virtuoso, MATLAB and Simulink.

Objectives of the project: odelling of blocks in the Rx-Tx system in Simulink.

Outcomes of the project: Created a test bench for jitter analysis of circuit, System level Simulink model of a CTLE circuit and PRBS jitter generator.

Major Learning Outcomes: Learnt about need for jitter analysis in modern circuits, techniques for jitter measurement and control and the jitter decomposition model and a programmable CTLE circuit.

Brief Description of working environment, expectations from the company: Work at Intel is challenging and the student will get a fair idea of the core EEE industry. Work environment is friendly. It is difficult to get appointments with mentors due to their extremely busy schedules. The campus is beautiful with plenty of perks for the intern.

Name: Maya Nagasunder (2013A8PS063H)

Student Write-up

Short Summary of work done during PS-II: During my PS-II at Intel, I was a part of the Structural Design Group, and worked with backend VLSI design of hardware for Intel's integrated graphics. Initially, I had to revisit concepts of power management and static timing analysis, and read up on physical design concepts. I learnt Perl and Tcl scripting and extensively used them in my project. I explored ideas for optimizing power in terms of reduction of leakage and dynamic power in graphics designs, while keeping in mind timing constraints. Data mining was performed and scope for optimization in previous designs was identified. I also worked on the implementation of a GUI using Perl/Tk for improving file management with EDA tools, specifically design rule files, to view, compare and modify files across

different projects, while handling multiple projects simultaneously. The aim was to reduce human error and improve efficiency by automating the process methodology.

Tools used (Development tools - H/w, S/w): Perl, Perl/Tk, Tcl, EDA tools: Synopsys PrimeTime.

Objectives of the project: To explore and implement ideas for optimization of design as well as methodology in the context of backend physical design of graphics hardware.

Outcomes of the project: Scope for power optimization was identified and the data was presented. The code for a GUI using Perl was completed and submitted for review.

Major Learning Outcomes: Tcl and Perl scripting, VLSI concepts: practical applications of concepts learnt in college, Exposure into the industry.

Brief Description of working environment, expectations from the company: The work environment is very encouraging and help is always given when one asks for it. The people at Intel are friendly and I learnt a lot from them.Overall, a great exposure into the real world and industry, a world which is very different from campus life at BITS.

Name: NIKHIL SHARMA (2013A8PS507G)

Student Write-up

Short Summary of work done during PS-II: Performed extensive simulation on the effect of timing jitter in the performace of the channel provided. Worked on the script to generate eye diagram and zero crossing bathtub curve. Obtained the the graphs of timing jitter vs eye opening for the channel provided.

Tools used (Development tools - H/w, S/w): MATLAB.

Objectives of the project: Performance analysis of high speed serial link using system level models in MATLAB.

Outcomes of the project: Worked on the script to generate eye diagram and zero crossing bathtub curve. Obtained the the graphs of timing jitter vs eye opening for the channel provided.

Major Learning Outcomes: Learned about broadband communication ciruits, concept of bit error rate, eye diagram and bath tub curve used for evaluating the performance of the channel.Developed skills in MATLAB.

Brief Description of working environment, expectations from the company: Very well organized, excellent work environment.If possible can organize some events for interns for development of industry related skills.

Name: RITUPARNA ROY CHOUDHURY (2012B1A3737H)

Student Write-up

Short Summary of work done during PS-II: To find out and optimize a technique for reducing area of a functional block & to reduce faults in scan chain testing for sequential circuit block.

Tools used (Development tools - H/w, S/w): Synopsis tool - APR flow, Tcl Programming.

Objectives of the project: To find out and optimize a technique for reducing area of a functional block & to reduce faults in scan chain testing for sequential circuit block.

Outcomes of the project: A script and an algorithm that helps enable scan chain testings and identifying markers for reducing area in a functional block.

Major Learning Outcomes: I learnt about scan chain methodologies, script writing with Tcl and relation between multiple variables to attain a reduced area of a block.

Brief Description of working environment, expectations from the company: Intel has an amazing work environment and you get to work on live projects and real time problems. The infrastructure and management is good and work is very effectively done here.

Name: RAKSHITH P (2015H140114P)

Student Write-up

Short Summary of work done during PS-II: Grid Optimization in robot coverage environments.

Tools used (Development tools - H/w, S/w):C++ STL, OpenCV.

Objectives of the project: Grid Optimization in robot coverage environments.

Outcomes of the project: Getting on work on cutting edge technology research; research and innovation.

Major Learning Outcomes: Knowledge of machine learning applied to autonomous robot systems, optimization algorithms.

Details of papers/patents: The project is going to be filed as patent and a part of it would be published in an IEEE conference.

Brief Description of working environment, expectations from the company: Healthy, flexible work environment; Lot of opportunities to showcase talent, discuss ideas and implement them; Regular fun activities in the team; very good exposure in terms of filing disclosures!

PS-II Station: Johnson Controls, Pune

Student

Name: MAKRAND YAROLKAR (2015H141045H)

Student Write-up

Short Summary of work done during PS-II: The project that i am working on is on valves and actuator. It is about design of gear train to obtain desired torque output. The project began with identifying the possible areas where the product has scope for improvement. Than competitive analysis was done to see what the competitors are up to. The next step was to do the necessary calculations involved in the design. After the design calculations were over, a CAD model was developed, to see how the product would look like. The final step in the product development was to get the prototype of the concept. For this Rapid prototyping was used (3D printing).

Tools used (Development tools - H/w, S/w): Creo, Inventor.

Objectives of the project: To make the actuator compact and make it aesthetically pleasing.

Outcomes of the project: Compact and low cost actuator.

Major Learning Outcomes: 1) HVAC industry 2) Competative analysis 3) Working in team 4) Product Development 5) Design of Gear trains.

Brief Description of working environment, expectations from the company: Working environment is quite relaxed and work culture is good. There are plety of opportunities for one to excel in their domain provided one is willing to constantly learn and put in hard work. There are plenty of technical events held in the organization.

Name: SREEKANTH P K (2015H148053H)

Student Write-up

Short Summary of work done during PS-II: The project was aimed to develop a new energy efficient and cost effective control valve to be used in HVAC applications. The major energy losses in HVAC occurs at chiller and pump because of the varying system load and hence chiller water flow rate. So a control valve which maintains required flow rate irrespective of system fluctuations is developed, which are called pressure independent valves.

Objectives of the project: To develop energy efficient and cost effective control valve which helps in providing better occupant comfort. The valve should be capable to hit the retrofit applications as well.

Outcomes of the project: Designed and developed a pressure independent control valve prototype, using the existing products of the organization. Designed a hydraulic test set up to test the prototype. The cost effective design of the product adds revenue as well as value to the organization.

Major Learning Outcomes: Gained sound knowledge on control valves, hydraulics, HVAC circuits, chillers, flow measuring technologies, designing of hydraulic circuits etc. The overall project work gave me exposure to product development, different steps in delivering a project, managing time and resource etc.

Details of papers/patents: Filed for 3 different patents on pressure independent valves.

Brief Description of working environment, expectations from the company: The working environment was competitive and challenging. The five month internship period is good enough to test all our skills; whether it's technical or managerial or communication. As the prototype is going to be one of the main products of the organisation I got opportunity to interact with the director level leaders as well delegates from abroad. The organization keeps high high expectation on us as we are tagged as 'BITSIANS'!!

PS-II Station: Mentor Graphics, Noida

Faculty

Name: Pawan Sharma

Comments: Mentor Graphics Corporation is a world leader in Electronic Design Automation (EDA) Tools business, having annual sales of about $800 Million. The Indian units employ approximately 350 engineers and are involved in research and development of key technologies and products for Mentor Graphics Corporation, its parent company. The students were provided projects mainly in the areas of digital design verification and validation, namely Development of DDR DIMM Sequence Library, Ethernet Compliance Tests and UVM based verification of AMBA AHB5 Slave component, Verification of Ethernet Transactor. The projects required students to have skillsets in the area of computer architecture, communication technologies, bus architectures and verification concepts. The courseware on Digital Design Verification and Validation, developed by experts from Mentor Graphics, greatly helped them in understanding verification concepts and writing test benches. The mentors were satisfied by the work carried out by our students.

Student

Name: V CHANIKYA REDDY (2012B5A8612H)

Student Write-up

Short Summary of work done during PS-II: Written test cases for the verification IP developed in mentor.

Objectives of the project: To verify the functionality of verification IP.

Outcomes of the project: To attain 100% coverage of functionality.

Major Learning Outcomes: Sv and uvm.

Brief Description of working environment, expectations from the company: It is a very good place to learn, all the members of the team are very friendly and very knowledgeable, they are very eager to teach us.

PS-II Station: National Instruments Systems (India) Pvt. Lt, Bangalore

Faculty

Name: Rekha A

Comments: The advantage of practice school is making students comprehend the industry and its needs even before going to a job and build their career. It helps in enhancing their skills by working on a live project but also prove advantageous to the organization by their innovative nature. The Students come from various discipline and work in various fields. By guiding the students from various branches of engineering like mechanical has given me an insight into the nature of work going on and the technology used. The students were given the skill set gap training so they are prepared before they come for the internship program. The students worked on various projects on image processing, embedded systems, physical design, communication, tracking of objects in motion, quality and reliability tests for the products, design of thermal management systems , verification and Validation etc. Interaction with the mentors helped in identifying the skill gap courses and set of basic courses need to work on the projects and the same was communicated to the students to refresh such courses before they join for internship. This helped the students to quickly ramp up with the work and start contributing towards the project. Also shared some of the e-books for system verilog, video basic books. PS II was truly enriching for the students as they got an insight into the latest tools technologies being used in the industry by working on the live projects . It was a satisfying experience, mentoring the students during their PS-2 course at Tonbo Imaging, National Instruments, Qualcomm and Toshibha. It was a good experience for me and feels more responsible to act as bridge between university and industry

Student

Name: ANUJ KHANNA (2015H124072P)

Student Write-up

Short Summary of work done during PS-II: I worked on the carrier frequency offset estimation for WLAN standards.

Tools used (Development tools - H/w, S/w): Lab View.

Objectives of the project: selection of the optimum method for the estimation of CFO versus symbol and to estimate CFO versus sample by constructing a reference waveform.

Outcomes of the project: Cyclic Prefix method is optimum for the CFO versus symbol trace and the time domain method fails in case of the non-flat channel in estimating CFO versus sample trace.

Major Learning Outcomes: WLAN standards, labview tool, application of signal processing and communications concepts.

Brief Description of working environment, expectations from the company: NI working environment is healthy, no deadlines pressure for the interns, guide and mentors are easily approachable and RF team is good for the communication field.

Name: ALAPATI SAI HARSHA (2013AAPS306H)

Student Write-up

Short Summary of work done during PS-II: Coding end-to-end OFDM chain in LabVIEW, analyzing the performance of the system with various settings in the presence of different impairments and testing the performance of various impairment estimation and compensation algorithms.

Tools used (Development tools - H/w, S/w): LabVIEW.

Objectives of the project: Coming with a unified mathematical model of signal in OFDM communication system with different impairments, developing algorithms for estimation and compensation of impairments in such systems.

Outcomes of the project: Obtained performance results of various estimation and compensation algorithms. This showed that with novel algorithms, we can improve the tolerance of the system which can be exploited to either lower the requirements of hardware design thereby enabling us to design cheaper and smaller hardware or we can employ higher order constellations thereby giving us higher data rate.

Major Learning Outcomes: OFDM communication system, hardware architectures used and impairments faced in such systems, novel algorithms for estimation and compensation of impairments.

Brief Description of working environment, expectations from the company: The working environment at NI has been very friendly towards recruits new to work. Ample time was given to get accustomed to the environment and learn all the basic fundamentals needed for the main project. Mentors and manager were very approachable and patiently helped a lot to overcome many hurdles faced during the initial stages. Even during the main project, they provided guidance wherever required. By the end of internship period, I developed attitude and skills needed to be a good team player in a professional working environment.

Name: Sameera Rangavajjula (2013A3PS442H)

Student Write-up

Short Summary of work done during PS-II: I interned with the Modular Instruments team at NI. My work mainly focused on 'Semiconductor Test System'. I was required to come up with an automated test system (ATS) for integrated semiconductor device testing. I also worked on chip testing using NI's modular instrumentation hardware such as DCPower/SMU's, Digital multi meter etc. I had an opportunity to work on two exciting NI based projects which focused on power comparison between the current generation and next generation of NI's flagship software LABView and also one relating to side channel attacks.

Tools used (Development tools - H/w, S/w): NI-LABView, NI-TestStand, Python programming language, PXI chassis and Modular Instrument Cards such as DCPower, DMM etc.

Objectives of the project: The objective of the project was to create an efficient and user customised ATS for semiconductor device testing.

Outcomes of the project: The outcome of it was that I achieved an optimised ATS which reduced considerable time while testing chips.

Major Learning Outcomes: I understood the cycle of semiconductor testing and the key parameters to focus on while optimising the semiconductor test system.

Brief Description of working environment, expectations from the company: I would take this opportunity to say that NI has been a really fun place to work at. It's a company that is always innovating. Even the projects we got as interns were new and we were given the freedom to come up with our own interpretation and solutions for it. I would especially like to thank my manager Srinidhi Narasimhachar and mentor Sachin Bashani for the valuable inputs and feedback from time to time. The work culture here is one of the best. Work pressure is moderate and projects are planned carefully with time. The hierarchy of employees is very transparent with even an intern being able to approach the India R&D head of the company directly. There are many exciting teams here such as Vision team, Motion team, LABView team, RF team which are continuously pushing the barriers in their respective zones. As a whole, I would say NI is an interesting place for those who want to challenge themselves continuously and not for those who expect regular repetitive work.

PS-II Station: Nvidia Graphics - Hardware, Bangalore

Mentor

Name: Sudeshna Guha

Designation: Mehak upgraded the boot performance model, published a revised version of a chip-level power sequence specification and enabled dynamic power model simulations of part of a new vision processor sub-system. During her internship, Mehak has been enthusiastic and willing to learn and deliver. For example, she learnt python scripting, excel macro handling, fundamentals of power analysis, picked up a proprietary simulation environment for power modelling.Within this short period of time. She has demonstrated that she can deliver on time by seeking help and driving the task at hand to closure. Her debug and analytical skills are excellent which she has demonstrated during the power model simulations. She has a good technical aptitude that was demonstrated in the way she instinctively picked up the power sequencing complexities and delivered on an open-ended problem statement. Mehak is also a great listener that helps her build perspectives fast by interacting with her seniors. Mehak will comfortably fit into any new engineer role in the industry of her choice. Given her background in mathematics, a promising area for her would be to explore opportunities in computing, data analytics and machine learning. Self-motivated, focused and technically competent young engineers like Mehak are a great help to NVIDIA and our engineers thoroughly enjoy mentoring youngsters like her. We challenged her with multi-tasking and she lived up to the challenge. It would be good for Mehak to focus on one task and explore opportunities to innovate she is capable of excelling at research, given her persistence, aptitude and dedication.

Name: Deepank Gupta

Designation: Deepthi has performed very well in her term as intern at Nvidia. She owned RTL Quality checks for full chip which are aimed at standard lint checks, Nvidia specific quality checks, DFT related checks. Deepthi has ramped up on the requirement and was able to understand the motive behind the checks. She debugged the failures, followed up with Design team to get the bug fixed and then verified it to take the issue to closure. Deepthi is hard working and has shown several qualities during her

tenure. She has the right spirit to understand the problem and always asks questions to make sure she understand whyâ€™s and howâ€™s of the task. Because of these qualities she could perform the task without much help after the initial ramp up was over. She also has been able to communicate with different teams across geography which is essential and this has helped her establish herself as a good team member.

Name: Sumit Shrivastava

Designation: Jayant has been nothing less than outstanding during his tenure here in NVIDIA. He started in the middle of the project and was given ownership of a half completed, very complex testbench. He was able to finish coding for the testbench including a lot of coverage writing that he had to do from scratch. He was responsible for the verification closure of the unit, and he has already brought it very close to that. He also took up additional tasks for different testbenches and carried them out in parallel. He is very independent, when it comes to execution, and needs very little help. I am constantly surprised by his ability to figure many things out on his own.

Name: Tejendra Pratap Singh Chauhan

Designation: The intern has done various tasks such as: addition of new stats to the HSHUB code for better debug and easier analysis, running full chip tests with PerfSim as target with different configurations and testlists for performance analysis, cleaning up of the HSHUB NVPD. He also worked on the 2xPD 16 Primitive POR feature.

Faculty

Name: Rekha A

Comments: NVIDIA Graphics Banglore HW team deals with design, development and verification of NVIDIA Graphics Chips. The expertise required for the students intended to work here are following.

a) Verilog

b) VLSI Design

c) VLSI Verification

d) Computer Architecture

e) C++

f) Unix Shell Scripting and basic Unix Systems knowledge

g) Perl

h) Python

i) TCL

Apart from these, students worked in the following will have added advantages.

a) System Verilog

b) System C

e) VLSI Back-end technologies like Synthesis, Place and Route, Timing analysis etc

f) Compilers

g) Graphics and Multimedia

As soft-skills, students should exhibit following qualities.

a) Hardworking

b) Ready to learn (it is a default expectation from the students)

c) Be proactive and ask questions without being shy

d) Work with lesser supervision

e) Efficient

f) On-time status reporting

g) Disciplined

Students are required to be familiar with Unix/Linux environment, programming languages like C++ and Verilog and scripting languages like Perl and Python before coming to the station. Otherwise their ramp-up time will be high, which may be a disadvantage during their internship.

Student

Name: KANUGOVI JAYANT BHARADWAJ (2015H140029G)

Student Write-up

Short Summary of work done during PS-II: My work was majorly focused on UVM test bench development. It involved development using system verilog and UVM classes. I was assigned a unit which was a part of the chip to be released. At the beginning a verification plan was devised and the tasks were to be covered based on this after it was verified the senior members of the team. We then developed UVM monitors, scoreboards, tests and interfaces for the unit. Thorough test runs were conducted to ensure the unit was bug free. We had to also debug and fix the issues at integration testbench level. After a sufficient confidence was developed in the unit the coverage coding was done.

Tools used (Development tools - H/w, S/w): Synopsys VCS, NVIDIA internal tools, Vim editor.

Objectives of the project: UVM Coverage coding for Design Verification.

Outcomes of the project: The unit level testbench was developed and coverage code goals were achieved.

Major Learning Outcomes: UVM form of verification methodology, System Verilog, Shell scripting, Linux, Architecture implementation, Testbench development.

Brief Description of working environment, expectations from the company: The team was very supportive right from day one. Mentor and Manager helped us ramp up swiftly and adjust to new tools. The team members were really friendly and we connected in no time. New concepts were explained to us in a very patient manner. Responsibilities were assigned without distinguishing us as interns. Frequent team outings and amazing perks make it a really great place to work.

Name: VARUN HALDIYA (2013A3PS303P)

Student Write-up

Short Summary of work done during PS-II: Infrastructure development and Verification of the Memory Subsystem. Work involved verification of the memory controller using a C++ based performance

simulator.Had to run tests for various units in the controller to verify that they are given expected performance. Made changes to the arch by adding new clients and a new rate control logic for requests that could cause back pressure in the channel.Added stats for Bandwidth and request numbers. Generated real life traces from real life test scenarios.

Tools used (Development tools - H/w, S/w): Programming Language - C++

Objectives of the project: Verification of the Memory Controller sub units and solving critical bugs that hamper the performance simulator.

Outcomes of the project: Verified many units and the bandwidth they provide.Generated real life trace for various IPs.Modified the architecture to add a new rate controller and a new client.Signed off on various bugs that hampered the execution.

Major Learning Outcomes: Better understanding of the architecture of a Memory Controller.Clearer understanding of the flow for architecture proposal.Perl Scripting mastery.C++ mastery.

Brief Description of working environment, expectations from the company: Amazing work culture and environment.Very informal. Everyone is extremely friendly and you can contact anyone for help irrespective of their age and position.Lot of benefits for interns as well. A game room to play the latest games on the Nvidia GPUs. I have thoroughly enjoyed my stay at Nvidia and it would be a really good option for those looking to get experience in the Digital side of electronics or architecture.

Name: BIPRASISH RAY (2015H123031G)

Student Write-up

Short Summary of work done during PS-II: I was a part of the DFT team during my internship perioid at Nvidia Graphics. Initially I was given the task of learning scripting languages, as I was not familiar with them. The most extensively used scripting languages in Nvidia are Tcl and Perl. Alongside this I was given some assignments to complete that would require the use of scripting languages. As I was comfortable with scripting, I was given complex tasks like writing scripts to automate the flow or collect some information from scripts. I had written around 5 scripts during my internship period. I was glad to know that one of those scripts was going to be used in a live project. But, my main project was to insert scan

in a given netlist and run ATPG on the scan inserted netlist and generate patterns. The patterns thus generated were to be tested using VCS simulation. The scan flow technique was changed, and so the new technique was to be verified by passing various complex macros through the flow and then running ATPG and VCS. This was a cross-functional work between two teams. The work that I had carried out in Nvidia was an application of two specific courses that I had undertaken as a part of my academic courses- CAD for IC Design and VLSI Test & Testability. The best part of working in Nvidia is that they do not differentiate between an employee and an intern. They allow interns to work on their live projects.

Tools used (Development tools - H/w, S/w): Tcl, Perl, Synopsys (Tetramax), Verdi.

Objectives of the project: The main objective of the project was to authenticate the new scan insertion technique and replace the old one.

Outcomes of the project: The new technique had passed most of the complex macros and is currently given to the CAD team to make some changes in the flow.

Major Learning Outcomes: It was a hands-on experience of the subject matter that was taught in two courses of my academic curriculum.

Brief Description of working environment, expectations from the company: The working environment is excellent here at Nvidia. There is no difference between an employee and an intern. They allow an intern to work on their live projects. This gives one a very good experience of the industrial approach taken to solve problems.

Name: Biplab Nayak (2012B2A8660P)

Student Write-up

Short Summary of work done during PS-II: I was given time to ramp up on Perl, Object Oriented Perl as well as some modules which were to be used in the project. I had to go through and understand the legacy logging system that was in use. Propose approaches on how to implement the new package. After implementation of the package, I was involved in designing test cases and unit testing the newly created package. Finally, The API's provided by the old system were replaced with those of the newer package with careful consideration to the shortcomings of the old logging system.

Tools used (Development tools - H/w, S/w): Perl.

Objectives of the project: To implement a Log4perl based logging system to replace the legacy logging used by an Option Processing Infrastructure.

Outcomes of the project: Successfully implemented the Log4perl based logging system.

Major Learning Outcomes: Perl, OOP.

Brief Description of working environment, expectations from the company: Working environment is good. Many of the employees are friendly and helpful. They try to have a discussion when you approach them with your doubts regarding concepts. The ramp up phase will be somewhat difficult for someone with zero or minimal exposure to programming as it involves solving some complex exercises. The mentor reviews code and advises on your coding style and approach. You are expected to follow their coding practices and give industry level code. You are expected to come up with your approaches for any problems that you are facing with your project. Mentor will provide you will minimal guidance. You are expected to own up to your actions.

Name: MANOJ KUMAR VALLAMKONDU (2013A3PS345H)

Student Write-up

Short Summary of work done during PS-II: Code coverage is a measure used to describe the degree to which the source code of a program is executed when a certain test suite runs. A program with high code coverage, measured as a percentage, has had more of its source code executed during testing which suggests it has a lower chance of containing undetected software bugs compared to a program with low code coverage. In performance verification, we measure the performance of the unit and check if it is meeting the set standards or not. It is done with the help of performance monitors which measure the number of cycles taken for the test to complete, FiFo details (Full, Empty), Bandwidth of unit interfaces etc.

Tools used (Development tools - H/w, S/w): UNIX, C++, VERDI, GDB and CTC.

Objectives of the project: coverage improvement and performance verification.

Outcomes of the project: 95% coverage of the model and complete verification of the unit.

Major Learning Outcomes: Work strategy in corporate world, new software tools, exposure to new technology and great leaning experience from esteem work professionals.

Brief Description of working environment, expectations from the company: It is like the best place to work with all the comforts you would expect and with proper and constant support from your team members, great food, outstanding gaming room.Company expects us to learn a lot make the most out of the internship and just complete the assigned work in stipulated time.Bet you will have great time in NVIDIA.

Name: PALAKURTHY SHIVANI (2013A3PS427H)

Student Write-up

Short Summary of work done during PS-II: Writing coverage for few features based on the PCIE specification and Nvidia specific design, running tests related the covered features to check for coverage hit update the code as necessary.Clean up the XMR errors for setting up the GLS and validated the changes with various regressions.

Tools used (Development tools - H/w, S/w): Gvim, Verdi.

Objectives of the project: Functional coverage for PCIe verification and debugging few of the failed regression tests.Gate level simulation (GLS) setup.

Outcomes of the project: Qualitative analysis of Verification of PCIe using System Verilog Coverage. Gate level simulation setup.

Major Learning Outcomes: Learning coverage coding. Using Verdi. Debugging tests.

Brief Description of working environment, expectations from the company: Work culture was good. Regular interactions with mentor and manager were helpful for completing work on work. Work to be allotted to interns should have been decided before hand so that the time would have been utilized more judiciously.

Name: SURYA SUDHAKARAN (2015H123153P)

Student Write-up

Short Summary of work done during PS-II: I started my work with understanding of systemC and TLM-2.0 moving on to maintaining regressions and code modification.

Tools used (Development tools - H/w, S/w): SystemC.

Objectives of the project: Monitoring Regressions and create same hierarchy in RTL with code modification.

Outcomes of the project: Better code structuring.

Major Learning Outcomes: SystemC and TLM port connections.

Brief Description of working environment, expectations from the company: very friendly and helpful staff.

Name: PRADEEP BANERJEE (2013A3PS274G)

Student Write-up

Short Summary of work done during PS-II: The work included writing OpenGL testcases and adding new features to the upcoming GPU chips.

Tools used (Development tools - H/w, S/w): OpenGL.

Objectives of the project: Improve efficiency of testcase building.

Outcomes of the project: Improved efficiency of testcase building.

Major Learning Outcomes: Got opportunity to learn new tools like OpenGL and UNITY game engines.

Brief Description of working environment, expectations from the company: Very good working environment.Got opportunity to learn lot of new things.

Name: MEHAK (2012B4A8666P)

Student Write-up

Short Summary of work done during PS-II: Booting is a process or set of operations that loads and starts the operating system, starting from the point when user switches on the power button. It is a user visible process which can be in the form of visible animation on a display screen and is therefore analogous to a sign-of-life on every Tegra product from handheld, embedded to automotive platforms. This is a very crucial process for any SOC and hence it becomes even more important to analyze the booting performance of Tegra. For this, we need to be able to quantify the task latencies of various boot stages. In this project, work has been done for enhancing the boot performance model and correlating latencies to test cases for Tegra SOC. Tegra SOC has been designed in such a way that some essential power sequencing requirements must be adhered to during various power stages like cold boot, power off, and deep sleep mode etc. Hence work has been done to improve the documentation of Tegra's power sequencing GFD. This involves translating a lot of tabular content into waveforms that can be interpreted easily and help in condensing information without losing the important aspects. It has been ensured that the new document is correct, precise and eliminates all the irrelevant content that applied to the previous families of the chip. Power simulation test bench (STIM) has also being setup for a new IP on Tegra.

Tools used (Development tools - H/w, S/w): Python programming, knowledge from Digital design and VLSI design.

Objectives of the project: Understanding Power Sequencing Requirements of a Tegra Soc, Enhancing Its Boot Performance Model and Modelling Dynamic Power.

Outcomes of the project: Completing all the three projects assigned.

Major Learning Outcomes: Power sequencing, power regression flow and boot process of Tegra.

Details of papers/patents: All is confidential information and Nvidia has a proprietary right to this.

Brief Description of working environment, expectations from the company: The work environment at Nvidia is really great. Everyone is extremely welcoming and helpful here. There is scope to learn lot of things and gain a variety of skills. People here are great at what they do and it is really inspiring to see such a set of brilliant minds at one workplace. The work timings are also good, it is quite flexible also as

one is given the freedom to work from home. There are also a lot of perks given to every intern like cab facility, meals, Tegra subsidy etc. Overall it was a great experience here and I am proud to recommend anyone to do their PS2 at Nvidia, Bangalore. It is a boon for the electronics students. My PS2 was truly an enriching experience at Nvidia, Bangalore.

Name: GOMPA KAVYA SUMA (2013A3PS388H)

Student Write-up

Short Summary of work done during PS-II: Power Estimation of Low Power chips. Mostly worked on the tool with few What if analysis for new chips and also tool infrastructure development.

Tools used (Development tools - H/w, S/w): Python.

Objectives of the project: Power estimation tools and few updates.

Outcomes of the project: Understanding and working flow of the entire LWPE implementation and few feature developments.

Major Learning Outcomes: Python coding, industry co-working experience.

Brief Description of working environment, expectations from the company: Working environment was very good.

Name: VANSHIKA BAONI (2013A3PS659P)

Student Write-up

Short Summary of work done during PS-II: I was involved in the development of an enhanced version of a performance data mining tool. A lot of features were added to this new version of the tool which enabled simpler and efficient performance analysis. It aids performance experts to debug quicker. Moreover, this development branch of the tool also has a rigorous testing platform that will enable developers to further extend the tool without investing much time in checking for corner cases and possible errors. The report generated by the tool can be in the form of an HTML webpage or an excel spreadsheet or both as per the user's requirement. I also wrote a generic script for obtaining Latency

Plots in which all the user needs to do is to specify the source and destination between which the latency is to be calculated and a few filtering and matching conditions. The script outputs a text file with all the data required for obtaining the latency plot. Gnuplot can then be used for visualizing the latencies or the text file can be used for further processing or analysis.

Tools used (Development tools - H/w, S/w): Perl, HTML, CSS, Javascript, C++ and OpenGL.

Objectives of the project: The project involves the development of an enhanced and better version of a Perl-based performance data mining tool, which is used primarily for Full Chip Performance Verification. The second part of the project deals with generation of Latency Plots from RTL signal dumps and its analysis for performance evaluation. I was also involved in writing directed tests to check performance of various units in the GPU pipeline.

Outcomes of the project: Both the projects that I was involved in (Development of the performance data mining tool and Writing of a generic script for obtaining Latency Plots) will go a long way in aiding users to debug quicker. It helps in easy and quick diagnosis of performance related issues thereby ensuring efficient Full Chip Performance Analysis. Moreover the tools are much more user friendly and intuitive to use.

Major Learning Outcomes: 1. Learnt about the world of graphics and got a high level view of how the GPU works. 2. Got to know about the performance related issues that crop up in various GPU units. 3. Learnt how a data-mining tool is developed and picked up various scripting languages like Perl and Python. 4. Got an insight into how graphic tests are written in order to stress particular units in the GPU Pipeline and checking for performance related issues in the unit. 5. Got a chance to work on UI for a tool using front-end web development languages like HTML, CSS and Javascript.

Brief Description of working environment, expectations from the company: My teammates and colleagues were extremely helpful and offered useful insights whenever I was stuck and needed help. The best part about Nvidia is the open culture that they have because it promotes learning and discussion not only within the team, but also across different teams. This helps in getting an overall perspective of things and learning about the various projects and development that is going on in the company.

Name: RAHULSURANA (2013A3PS072P)

Student Write-up

Short Summary of work done during PS-II: Automation of tests using Perl and Python, test debugging, code coverage and enhancement of checker scripts.

Objectives of the project: Enhancement of Checker Scripts and Automation in Verification.

Outcomes of the project: Enhancement of the tests as they were automated. Reduce run time for the test.

Major Learning Outcomes: Perl, Python.

Brief Description of working environment, expectations from the company: A decent working environment, very helpful people.

Name: NIKUNJ BHIMSARIA (2013A8PS439P)

Student Write-up

Short Summary of work done during PS-II: My work as an intern in the Tegra Memory Arch team.Has revolved around infrastructure development and verification of aforementioned infrastructure.

Tools used (Development tools - H/w, S/w): Perl, C++ and Verdi.

Objectives of the project: To develop infrastructure for better analysis and performance verification of architecture.

Outcomes of the project: Developed infrastructure was integrated into existing verification flow.

Major Learning Outcomes: A decent working environment, very helpful people.

Brief Description of working environment, expectations from the company (in no more than 250 words): The five months at NVIDIA BDC have been an interesting experience. The employees are helpful and welcoming. There is a lot to learn both practically and theoretically.

Name: M NIKITHA REDDY (2013A8PS473H)

Student Write-up

Short Summary of work done during PS-II: My project here in Nvidia is basically dealt with semi-formal verification of modules that makes GPU pipeline. While working on project I became familiar to verification environment and code infrastructure. I learned various RTL debugging tools (Verdi, JasperGold), techniques and languages (Perl, TCL and some Nvidia proprietary tools). I was completely new to GPU but at the end of my internship I gained considerable knowledge on formal verification, GPU architecture and GPU pipeline.

Objectives of the project: Verification at various levels.

Outcomes of the project: Verification done at various levels.

Major Learning Outcomes: Learned various verification methods and tools.

Brief Description of working environment, expectations from the company (in no more than 250 words): Work environment is really good. Free to ask anyone anything related to work.Very good culture.

Name: ISHAN VIJAY YELURWAR (2013A8PS492G)

Student Write-up

Short Summary of work done during PS-II: Implementing and debugging features for NVIDIA's ARM Simulator.

Objectives of the project: Making NVIDIA's CPU ARM compliant.

Outcomes of the project: Booted a VHE Kernel on the simulator.

Major Learning Outcomes: ARM Architecture, Operating Systems.

Brief Description of working environment, expectations from the company (in no more than 250 words): Work culture is very good. Interns are treated the same as employees and given the same work. Interns directly work on the main project.

Name: ISHAN SHARMA (2013A8PS563P)

Student Write-up

Short Summary of work done during PS-II: Cleaning up of the RTL nvpdm for High Speed Hub (HSHUB) which was full of bogus stats. The experiments in hshub.pymlt were hand written, hence no scaling at all.Addition of loops and if conditions for different chips to generate the pml files Addition of new stats to HsHub Perfsim code for better debug and easier analysis. The stats added included latency stats, read, write and atomic requests and categorized them into 32, 64, 96, 128, 256 bytes etc. Worked on the bugs involving PD clients showing fake elapsed clocks and got familiar with the MEMSU flow. Other tasks included running full chip tests with Perfsim as target for performance analysis with different test lists. Worked on 2xPD prim POR feature

Tools used (Development tools - H/w, S/w): Verdi, VNC and GDB.

Objectives of the project: Clean up and Performance verification.

Outcomes of the project: Achieved the target.

Major Learning Outcomes: learned a lot about architecture.

Brief Description of working environment, expectations from the company (in no more than 250 words): The working environment in the company was good. Asking doubts is encouraged. One can learn a lot if you put in the required effort.

Name: FATHIMA SHIRIN AHAMED ALI (2013AAPS212H)

Student Write-up

Short Summary of work done during PS-II: I worked in the CPU validation team. My task was to validate the hardware decoder which converts the ARM instructions to native instructions. My work involved writing tests, generating tests and debugging failures. The goal was to achieve an error free decoder.

Tools used (Development tools - H/w, S/w): UNIX and shell programming.

Objectives of the project: Objective is an error free hardware decoder. Make sure all instructions are tested and are bug free.

Outcomes of the project: Have improved pass rates for tests running at the decoder. Several incorrect handling of instructions corrected.

Major Learning Outcomes: Computer Architecture details - Working of the processor, pipe-lining. Importance of validating the processor.

Brief Description of working environment, expectations from the company (in no more than 250 words): Undoubtedly one of the best PS stations. Work environment is extremely friendly. You could feel at home, working with the teams in Nvidia. Apart from the wonderful environment, you get to work on ongoing projects. Jobs of high importance are trusted upon you.In all an awesome learning experience. Also, you get to enjoy several perks and subsidies as an intern.

Name: RIYA KAUR LABANA (2013A8PS416G)

Student Write-up

Short Summary of work done during PS-II: I was involved in the validation of the config tool for which i was supposed to run the tests and look at the output as PASS or FAIL and then analyze as to why it passed or failed.The tool that i was validating was a graphical user interface that provided ease for the debugger to choose the signals from the interface instead of going and debugging huge scripts of hardware.I was a part of DFD (Design for debug) activities which are mostly post silicon activities. After validation of tool i was also involved in adding some features to the tool like generating scripts on a button click to take data logs from silicon.

Tools used (Development tools - H/w, S/w): Knowledge of python, shell scripting, Tcl scripts.

Objectives of the project: 1. Validation of the config tool 2. Adding JTAG support to the tool to enable reading data RAM in case of system hang. 3. Developing reg dump scripts to read out the register values along with their respective field enumeration.

Outcomes of the project: 1. Performed some set of 25 tests to validate the tool and the tool was validated to be functioning correctly. 2. Added JTAG support and also validated it.

Major Learning Outcomes: Understanding the purpose behind using the tool and its various button and signal functioning and then validating it and checking the output and analyzing the results. As the entire

back end coding was done in python so learning python also became very important. The reg dump script was mostly a combination of python and shell scripting. Improvising the tool features by adding JTAG support to it and working on hardware board provided clarity on registers and its addresses.

Brief Description of working environment, expectations from the company (in no more than 250 words): The managers and mentors are very helpful. They expect you to go in depth and understand as to why the thing you are doing is important. They encourage you to ask questions and clarify all the doubts. They are always available to help, you can schedule a meeting with your manager or mentor as per their availability any time if something is gating you. Managers keep weekly meetings to check the progress of the work and the interaction with the mentor is on daily basis.

Name: SANGODKAR ESHAAN MANGUESH (2013A8PS515G)

Student Write-up

Short Summary of work done during PS-II: My project involved unit level deadlock verification of Memory Controller Fabric (MCF) of Nvidia's latest tegra chip. This includes a systematic approach adopted for carrying out the same using the Universal Verifiication Methodology. Infrastructure essential for carrying out the deadlock verification was developed. Several tests were designed to induce deadlock conditions in the chip and then their outputs were studied.

Tools used (Development tools - H/w, S/w): System Verilog, shell scripting, UVM.

Objectives of the project: To test if the subpart of Nvidia chip is deadlock verified.

Outcomes of the project: The subpart of the chip was successfully tested as deadlock proof.

Major Learning Outcomes: Learned about verification.

Brief Description of working environment, expectations from the company (in no more than 250 words): They do not treat interns differently.

Name: SWAPNESH KUMAR SAHOO (2013A8PS176G)

Student Write-up

Short Summary of work done during PS-II: Top cluster SoC verification - Worked on top cluster components such as padring, pinmux, floorsweeping, gate-level simulation; CPU verification - Worked on certain tests related to CPU components and DFD related work on watch-dog timer.

Tools used (Development tools - H/w, S/w): Verdi, Perl, C++, Python and Assembly.

Objectives of the project: To develop API for abstraction of pad control register accesses; test and testplan development for floorsweeping; pinmux and padring test updates and API enhancements; Padring and pinmux formal verification; test development for WDT.

Outcomes of the project: The API for pad control register accesses was developed and all tests assigned were written successfully.

Major Learning Outcomes: Scripting, ASIC workflow, Functional and Formal verification.

Brief Description of working environment, expectations from the company (in no more than 250 words): Working environment is very comfortable and the informal culture makes it easy to interact with colleagues. People in general are also very friendly and helpful. Only suggestion would be that Nvidia could have arranged a brief introduction to the project we are working on in the beginning in order to speed up the ramping up process.

Name: ANISH BANSAL (2013A8PS171P)

Student Write-up

Short Summary of work done during PS-II: I worked on multiple projects. Register Verification Enhancements, writing VC Timeout Test and raising needed asserts, generating a testlist, working on the randoms tree, working on testpoints to get 100% coverage and automating the waiver file generation from the coverage summary file. There was a continuous inflow of work and the work was instantly used in the top flow which makes it important and hence interesting.

Tools used (Development tools - H/w, S/w): Scripting in PERL, Python, C++ and Verilog. Make and GCC were used and Perforce for the cloud operations.

Objectives of the project: 1. Register Protection Enhancement 2.VC timeout status matching between RTL and TB 3.Adding Coverage to the Unified Randoms Tree. 4. Generating a specific testlist for Secure Registers and get 100% Coverage to them.

Outcomes of the project: Fulfilled all the objectives. All these changes are integrated to the top level flow.

Major Learning Outcomes: Scripting, Verification, Test Writing, Assertions, Coverage and Test Flow.

Brief Description of working environment, expectations from the company (in no more than 250 words): The Working Environment is great. Everyone here is keen to work, discuss openly about any ideas that they have, counter anyone at any post if you feel he's action is not right. There is a flat hierarchy; nobody is nobody's boss off paper. Everyone is very friendly. You give them the results and they will keep you happy. The food is not bad either.

Name: AKSHAT MATHUR (2013A8PS384P)

Student Write-up

Short Summary of work done during PS-II: Power and timing analysis of chip partitions using EDA tools from Synopsis and Cadence.

Tools used (Development tools - H/w, S/w): 1.Cadence Voltus 2.Synopsis IC Compiler II.

Objectives of the project: Analysis of power and timing of a chip partition.

Outcomes of the project: Learnt chip power analysis techniques, floorplanning and static timing analysis in a chip.

Major Learning Outcomes: Physical Design step of ASIC Design flow.

Brief Description of working environment, expectations from the company (in no more than 250 words): Working environment is conducive to learning. Employees are helpful. Presence of BITS-Pilani Alumni makes industry transition easier.

Name: SUMIT MANSINGHANI (2013A3PS229G)

Student Write-up

Short Summary of work done during PS-II: I worked on the PCIe register verification and constrained randomization of registers.

Tools used (Development tools - H/w, S/w): System Verilog, UVM, RAL, Shell and Perl Scripting.

Objectives of the project: One of the objectives of the project was to solve all the register mismatches in the reset value check and read write verification check. Another was to add constraints for registers so that they attain only valid values during randomization.

Outcomes of the project: All the mismatches were solved and register constraints were added and verified by randomization.

Major Learning Outcomes: System Verilog, UVM, Shell Scripting.

Brief Description of working environment, expectations from the company (in no more than 250 words): Working environment is excellent.

Name: KONDAMPALLY SAICHANDRA REDDY (2013AAPS220H)

Student Write-up

Short Summary of work done during PS-II: Being part of GPU fullchip verification team at NVIDIA the major work was to debug the failures. My team comes at the stage of RTL verification of full chip where simulation based full chip level tests is run covering various functionalities and checking for the failures. Tests are divided into various categories covering the entire functionality of full chip. Regressions are run by the feature owners frequently where failures are identified.In any ASIC design flow RTL verification is one of the important process. RTL code and testbench are simulated using HDL simulators to check on the functionality of the design. If the results do not meet the expected output then the bug can either be in the RTL or the test environment itself. Therefore it is important to identify the reason for the failure by analyzing the error and narrow the issue which forms the crux of the triagning or debugging.

Tools used (Development tools - H/w, S/w): VCS Simulator, Verdi, Siloti, Linux, Perl and Verilog.

Objectives of the project: The objective of the project was to debug failures from various simulation based tests covering the functionality of GPU.

Outcomes of the project: Various bugs related to the RTL logic and Verif environment have been resolved.

Major Learning Outcomes: The knowledge of ASIC design flow in industry and efforts of various teams involved in this process has been the major outcome. Verilog Coding Skills have been improved by understanding various RTL designs while debugging the failures.Time management and corporate work culture are also the major learning outcomes.

Brief Description of working environment, expectations from the company (in no more than 250 words): The working environment in the company was excellent.The mangers and mentors are very helpful.Out of their busy schedule they never hesitate to spend time for clearing our doubts and day to day work issues. The work assigned was also similar to the employees working there which makes you feel confident about your ability to work.Many of our seniors have been working there who have been constantly guiding us through out the internship.Overall , the company has met all my expectations making my internship a valuable one.

Name: APARNA S (2013AAPS780H)

Student Write-up

Short Summary of work done during PS-II: CPUs in Tegra SOCs are ARM implemented. I worked on the verification of ARM Debug features in a Tegra SOC. The project required understanding of ARM architecture. It mainly involved register level programming. I wrote various test cases using an in-house perl-based Nvidia tool. These verified the debug related features introduced in ARM v8.1 and v8.2 extensions.

Objectives of the project: Verification of debug features in a System on Chip.

Outcomes of the project: Verification of the upcoming Tegra Soc.

Major Learning Outcomes: Industrial exposure, understanding ARM architecture, understanding debug features.

Brief Description of working environment, expectations from the company (in no more than 250 words): Nvidia's work culture is great. The learning curve is steep and we get to work on live projects. Everybody is very helpful and approachable. Taking Computer Architecture course would be helpful. I was expected to understand the debug architecture of CPU and contribute effectively in verification of the same.

Name: SHRAVYAM (2012B5A8478H)

Student Write-up

Short Summary of work done during PS-II: As part of a team that is involved in unit level verification of a module, I was firstly introduced to the concept of code coverage. The work included running tests for functionality check and to meet the coverage goals.Also, understood the power requirements for the unit, and after finalizing the power testplan, coded and generated power reports for the unit. Lastly, wrote a perl script to generate testpoints for all interfaces to our unit to verify expected behaviour.

Tools used (Development tools - H/w, S/w): Synopsis Verdi.

Objectives of the project: The objectives of the project included handling coverage runs at different phases of the project, coding the power testlist, fixing the power numbers and generating power reports, cleaning up the unit level testbench for running Gate level simulations, writing a perl script to automate generation of interface testpoints.

Outcomes of the project: Fixed the unit testbench for running gate level simulations. Coded the power testlist and generated power reports, the power numbers were verified to be meeting expectations. Wrote a perl script for generation of interface testpoints.

Major Learning Outcomes: Familiarization with code coverage concepts, experience with working on C++ and verilog, working level knowledge of perl scripting.

Brief Description of working environment, expectations from the company (in no more than 250 words): NVIDIA has a very encouraging work culture; it provides vast opportunities to learn. The

company appreciates interns exploring and asking questions themselves and being proactive. Certain teams have tight deadlines and the interns are expected to keep up with these as well. From a hardware point of view, it would be beneficial for interns to know perl scripting, linux, verilog, VLSI and digital design concepts.

Name: KEERTHANA TIRUVEEDHI (2013AAPS649H)

Student Write-up

Short Summary of work done during PS-II: Learnt the concepts related to Low power architecture and verification in depth.Worked on Low power verification for two upcoming GPU chips. Verification involved learning tcl script and shell scripting.Also worked on design changes in RTL. Prior knowledge in Verilog is useful for the same.

Objectives of the project: Static Low Power Verification of GPU.

Outcomes of the project: Golden power intent.

Major Learning Outcomes: Learnt the various techniques practiced in the industry for low power.Learnt to use tools which are commonly used in the industry. Gained experience in scripting.

Brief Description of working environment, expectations from the company (in no more than 250 words): The work environment is very friendly. There is not much pressure. Managers are approachable and eager to help us to understand in depth. Team mates are always ready to help. When you start to work here, you will understand how much effort, from numerous teams it takes to get a single chip made, and you will truly appreciate the amount of importance given to each and every stage in this process. The languages and tools that you learn can be useful in the future. But this put aside, in Nvidia you can get a clear picture of the Industry.

Name: VISWESWAR REDDY VENKATANARIGARI (2013A3PS208H)

Student Write-up

Short Summary of work done during PS-II: Automation of works like

•Rerunning failed simulations (one simulation for a particular signature).

•Checking the indentation of the Verilog, system Verilog, perl files before submiting them to the tree.

•Categorizing the log lines based on input map file and creating a database file and filtering required log lines based on output map file.

•Fsm (states and transitions) comparisions of two projects.

Tools used (Development tools - H/w, S/w): python.

Objectives of the project: automation.

Outcomes of the project: automation.

Major Learning python scripting: python scripting.

Brief Description of working environment, expectations from the company (in no more than 250 words): Working environment is good. Throughout my whole ps I did only python scripting. So I think they don't expect much more than a scripting.

Name: ARUNDHATI SATISH DONGRE (2012A3B3243H)

Student Write-up

Short Summary of work done during PS-II: Verification of different functionality of the Debug bus was done using both, functional verification; testing with RTAPI and formal verification, with JasperGold.

Tools used (Development tools - H/w, S/w):C++, Verdi and JasperGold.

Objectives of the project: Verification of the Debug Bus (part of Design for Debug) in System on Chip.

Outcomes of the project: Verification of different functionality of the Debug bus was done using both, functional verification; testing with RTAPI and formal verification, with JasperGold.

Major Learning Outcomes: I learnt about the verification procedures followed at Nvidia, how to debug if a failure arises and how check for all scenarios.

Brief Description of working environment, expectations from the company (in no more than 250 words): The Company expects someone to have basic knowledge of what they are working in and presence of mind while working. Mistakes are encouraged as a stepping stone to success and learning is welcome. The people working create a friendly environment and help each other whenever possible.

Name: DEEPTHI SAI NANDINI ANNAM (2013AAPS169H)

Student Write-up

Short Summary of work done during PS-II: Understood the role where my team SOC Design fits in the chip flow.Understood the chip flow and present chip architecture. My work is to perform static verification on RTL using in house develped tool, debugging the errors, filing bugs and verifying the fixes. Published the status of all the checks every week.Updated a perl script to enhance the flow.

Tools used (Development tools - H/w, S/w): H/w - NVIDIA specific tool, S/w Perl.

Objectives of the project: To ensure static error free RTL before netlist. To develop flow enhacement scripts.

Outcomes of the project: Learnt perl scripting and how the chip flow happens in the industry.

Major Learning Outcomes: Understood how the chip flow happens and how important it is to perform static checks on RTL.

Brief Description of working environment, expectations from the company (in no more than 250 words): Excellent work culture. Not much time was available to ramp up since entered into the company in the middle of the project. But manager and the other team members helped a lot.

Name: Divya Suneja (2013A8PS570P)

Student Write-up

Short Summary of work done during PS-II: Verification of some components of Tegra CPU. Writing new tests, enhancement and debugging of existing tests.Enabling the functional coverage for a high speed

communication channel - NVLink.Closure of toggle coverage of one of the IPs.Closure of functional coverage of Control and Data Backbone.

Tools used (Development tools - H/w, S/w):C++, System Verilog, Verdi, VCS, Perl, tcl and Shell scripting.

Objectives of the project: Developing tests for the verification of certain components of Tegra.Added new tests to their regression.Played a part in debugging of some existing tests.

Outcomes of the project: Learned how to write verification tests for Hardware IPs.

Major Learning Outcomes: Developed new tests, enhanced existing tests for the verification of hardware IPs.

Brief Description of working environment, expectations from the company (in no more than 250 words): Good and helpful team. Work load was manageable.Suitable working hours.

Name: SUNIL MANE (2013A3PS300G)

Student Write-up

Short Summary of work done during PS-II: We know the importance of logging at every step of software development to reduce its complexity. My work involved writing wrapper module to improve the ad-hoc logging system. I got familiar with the working of unit tests and their importance in maintaining program as they check that the program works and continue to work as the developer intended or planned for it to work. So units' tests are also written by me to check working of wrapper module. As coding language of the project was Perl, so I learned Perl right from the basic. I also got the opportunity to acquire thorough knowledge object oriented programming concepts. I also got familiar with the working of Makefile. I comprehended the moose concepts.

Objectives of the project: To improve the home grown logging system using Log::Log4perl.

Outcomes of the project: Improved logging system which enables Log::Log4perl is more efficient. It gives user smart control over logging events.

Major Learning Outcomes: Perl, Perl OOP, Logging, Unit testing.

Brief Description of working environment, expectations from the company (in no more than 250 words): Working here is an excellent learning opportunity and industrial exposer. All the team members were always welcoming, they helped me out to clear even very basic doubts. HR team was also very helpful, they conducted various sessions for our improvements.Company expect us to have proficiency in at least one of the programming languages. It would be very helpful if you have thorough knowledge of Object Oriented Programming and its practical implication.up to date with events going on, new inventions and new technology in IT industry would be plus point. Working on this platform has helped me so much to learn about industry standards.

Name: K M K PRAVEEN KUMAR (2012B3AA595H)

Student Write-up

Short Summary of work done during PS-II: First i understood the schematic of the Memory Macro (Register file) in detail.Then i did timing related checks in the read path like does the read begin only after the write of the previous cycle ends.Then i did voltage checks, the read path has a lot of leakers i checked whether the keeper is able to support the leakers.

Tools used (Development tools - H/w, S/w): HSPICE, Perl, Cadence virtuoso, Verilog HDL.

Objectives of the project: Do margin measurements (race conditions) and debug violations.Do Keeper leaker study for the memory macro (Register files).

Outcomes of the project: All the Race conditions were solved.Keeper leaker analysis for the memory macro was completed.The design has been rendered safe from this perspective.Appropriate keeper delay time was selected.

Major Learning Outcomes: I was exposed to various industry standard tools like HSPICE, Cadence virtuoso software and Verilog HDL. Got a good overall understanding of memory design.Learnt how to do circuit connections in Hspice verify the setup and debug the setup issues.Along with these I also learnt a lot of things used day to day in VLSI field (like UNIX, Perl,Vim). Working here has also strengthened my circuit basics.

Brief Description of working environment, expectations from the company (in no more than 250 words): Overall, it has been a good exposure. I got insight on how technology driven company like NVIDIA works. The team with which I worked was good. The work was tough, exhaustive and challenging.Expectation from interns is also pretty high.Work culture of the company was excellent. I realized the importance of doing things in a systematic and organized way.

Name: BRISTENIYA MATHEWS THOMBRA (2015H123032G)

Student Write-up

Short Summary of work done during PS-II: Was assigned into the formal verification team of the NVIDIA GPU. The project involved understanding the basics concepts of formal verification which is unlike simulation based verification. The project assigned was to formally verify the PCIE between the GPU and CPU. Hence it was necessary to understand the basic PCIE protocols and mainly the interrupt handling by PCIE. During the initial phase of the project it was required to detect the over-constraints in the formal environment through simulation in-order to increase coverage. This process involved running simulations and debugging the failures. The next phase concentrated on writing formal properties for some features in PCIE. It gave an insight on what are the metrics that a formal engineer should take care while coding properties and how to debug them. The last phase of the project also concentrated on coding formal properties, but it was a totally new feature due to which the RTL for the design was not clean. A lot of the failing properties in this case were reported as bugs and required fixes from the design team. Since formal verification is not exactly black box verification, it required to understand and analyze what the design engineer has implemented and required to be in constant touch with the design engineers.

Tools used (Development tools - H/w, S/w): Cadence JasperGold, Synopsys Verdi.

Objectives of the project: Formal Verification of PCIE in GPU.

Outcomes of the project: Formally verified PCIE subunits and detection of overconstraints through simulation.

Major Learning Outcomes: Formal verification methodology.

Brief Description of working environment, expectations from the company (in no more than 250 words): The working environment was very pleasant and satisfactory. The company expects the interns to have knowledge on UNIX programming, Verilog/SystemVerilog and digital design.On joining the team, assignments were given in the first week and areas in which a pre-requisite knowledge was expected was conveyed. The company has its own terms and methodologies which were difficult to adapt to initially.Was assigned a mentor who guided me through out the project. The mentor assigned to me was very welcoming. There were regular weekly meetings where you needed to say or show your status on the tasks that have been assigned. Weekly reports to the on the progress of your project or task is also expected. There were also regular one to one meeting with the manager to discuss our status on the project and discuss our feedback on the work assigned. The employees are very interactive and everything was well communicated.

Name: PLAKSHAVERMA (2013A3PS316P)

Student Write-up

Short Summary of work done during PS-II: The work involved the application on SV – UVM (System Verilog - Universal Verification Methodology) for verification of PCI-E registers used in NVIDIA GPU.

Objectives of the project: Register verification of PCI-E in NVIDIA GPU.

Outcomes of the project: Verification of PCI-E Registers.

Major Learning Outcomes: Universal Verification Methodology, System Verilog.

Brief Description of working environment, expectations from the company (in no more than 250 words): The managers and mentors are very helpful. They encourage the interns to come up with new solutions to solve the existing problems and guide them in case of any blocking issues. The work involves basic scripting, writing testcases for verification, debugging the already existing issues.

Name: VENKATA SAI MANOJ KUMAR GUNTURI (2013AAPS267H)

Student Write-up

Short Summary of work done during PS-II: Wrote several scripts to verify low power features in the upcoming tegra chips.

Tools used (Development tools - H/w, S/w): perl.

Objectives of the project: Low Power Verification.

Outcomes of the project: Verification of low power features.

Major Learning Outcomes: Advancements taking place in power management features of VLSI designs and perl scripting Lang.

Brief Description of working environment, expectations from the company (in no more than 250 words): Company with smart and friendly people with abnormal skill sets. Overall great place to work and definitely a valuable learning experience.

PS-II Station: Nvidia Graphics -Software, Bangalore

Student

Name: Ajinkya Tundurwar (2013A8PS853G)

Student Write-up

Short Summary of work done during PS-II: As part of my PS-II program at Nvidia Graphics - Software Division, I worked on the Implementation of Robot Operating System for Nvidia Drive Works Platform. My work was mostly concerned with the implementation of USB camera as a part of multi-media applications on the Nvidia Drive Works SOCs platform using ROS as a framework and EGL_Stream as a transmission media for the camera frames.

Tools used (Development tools - H/w, S/w): Nvidia Drive Works CX2 SOC platform, Robot Operating System, USB Camera, C++ Programming and Cuda Programming.

Objectives of the project: The objective of the project was to implement the USB camera on the Nvidia Drive CX2 platform using ROS as framework on the Ubuntu version running on the platform. The USB camera should use the EGL_Stream APIs for transmitting the camera captured frames along with the NvMedia APIs in the ROS environment.

Outcomes of the project: The USB camera used in the project was able to work perfectly in the ROS environment on Nvidia Drive CX2 platform using EGL_Stream.

Major Learning Outcomes: The five months internship at Nvidia was game-changer for me as it helped me in improving my knowledge vastly in the field of embedded system and computer programming. Internship provided me with an opportunity to work on amazing new things like ROS (Robot Operating System) and EGL_Stream which are frequently used in the industrial world for multimedia purposes. Apart from the technical stuffs, the internship helped me learning many personality traits like working in team, communication skills, etc. And in realizing how professional world works and how it is different from assumption that we developed during our college life. Overall the internship helped me in making myself a better person in life.

Brief Description of working environment, expectations from the company: Members of my team including my manger Harshraj Rao was extremely friendly in nature & will always help me in all the ways

possible to them. I think the only expectation that the company had kept from me was that I should have some type of hands-on experience C/C++ programming language, UNIX commands and should have some knowledge of the Operating System concepts.

Name: SAMHITHA VADLAMANI (2012B5AA646H)

Student Write-up

Short Summary of work done during PS-II: Integrating Robot Operating System (ROS), an open source software for robotic applications, with the NVIDIA's system on chips. Firstly, I learnt about different concepts involved in ROS and implemented few simple applications to get a hold of the software. I then worked on fetching the pre-built binaries on to NVIDIA's Drive platforms, followed by successful building of a ROS package, named rviz from the source.

Objectives of the project: 1.To ensures proper functioning of the pre-built ROS packages on the Drive platform.

2. Native compilation of the entire ROS environment on the Drive platform from source.

3. Cross compiling the ROS packages from source for ARM architecture using x86 host platform.

Outcomes of the project: 1. understood the working pipeline of ROS and learnt to write scripts required to build ROS packages.

2. Got the pre-built ROS binaries onto the Drive platform and ensured their working using the sample applications.

2. The native compilation of a ROS package named rviz was successfully performed.

Major Learning Outcomes: 1. understood the working pipeline of ROS and learnt to write scripts required to build ROS packages.

2. Got the pre-built ROS binaries onto the Drive platform and ensured their working using the sample applications.

2. The native compilation of a ROS package named rviz was successfully performed.

Brief Description of working environment, expectations from the company (in no more than 250 words): The projects assigned mostly are parts of the on going work, so, it is motivating for the interns to actually discern their contribution to the organization. The working environment at Nvidia is very vibrant with the team members helping each other out in case of any hurdles in the progress of work. However, the interns are highly encouraged to first research and look for plausible solutions on their own before turning to help from the mentors. But if there's any difficulty in getting the queries resolved, the interns are very welcome to get them clarified from the mentors/managers.

Name: SUMIT KHAITAN (2013A7PS051G)

Student Write-up

Short Summary of work done during PS-II: Solving Issues detected by static code analysis, verifying some tests, and developing an internal tool.

Tools used (Development tools - H/w, S/w): Coverity, git, gerrit.

Objectives of the project: Solving Issues detected by static code analysis, verifying some tests, and developing an internal tool.

Outcomes of the project: Solving Issues detected by static code analysis, verifying some tests, and developing an internal tool.

Major Learning Outcomes: Advance C/C++, How resource managers work and their importance.

Brief Description of working environment, expectations from the company (in no more than 250 words): The working environment is really good here. I was expecting something better to work on like actually developing some tool or at least work on cuda (parallel computing). But the work assigned to me was debugging.

Name: MOHAK CHADHA (2012B4A7524G)

Student Write-up

Short Summary of work done during PS-II: Designed and developed a robust computer vision based lane detection system. The project involved the use of several image processing concepts and computer vision techniques. The lane detection algorithm was implemented and tested on an embedded platform on which it achieved real time performance and good accuracy.

Tools used (Development tools - H/w, S/w): S/w - C++, Cuda, Python and Linux Shell Scripting.

Objectives of the project: Design and develop a robust computer vision based lane detection system for an embedded platform.

Outcomes of the project: Implemented a real time computer vision based lane detection system which takes 22 ms on average to process a frame, resulting in approximately 46 fps.

Major Learning Outcomes: Computer Vision, CUDA, Writing Highly Optimized Code.

Brief Description of working environment, expectations from the company (in no more than 250 words): The working environment at Nvidia is really good. The employees and team members are really helpful and make the transition from academia to industry quite easy. Overall, the company expects you to complete the task that you have been given, give regular updates.

Name: POOJASHREE M S (2015H140119P)

Student Write-up

Short Summary of work done during PS-II: Worked on the code coverage tools like GCOV and LCOV, kmemleak tool to detect any memory leaks, Nvidia specific memory dump utility which gives a RAM dump when the system crashes and memory parser utility to analyze the crash dump data and a device driver was developed for RTC to register as an I2C peripheral for Nvidia specific board which includes features like set date and time, read date and time and wakealarm where an interrupt is generated when the alarm is triggered which is used to wake (power up)the system at a given time. All are with respect to different bugs that were assigned to me.

Tools used (Development tools - H/w, S/w): Gcov, lcov, kmemleak, mem_parser.

Objectives of the project: To modify the existing driver to register as an I2C peripheral as well. To add the alarm functions to support the wakealarm features.

Outcomes of the project: The driver is working fine with the features such as setting date and time, read date and time and waking up the system (wakealarm feature) at a particular time of day.

Major Learning Outcomes: Knowledge about developing a device driver, kmemleak tool, gcov and lcov tools and RAM dump tools and memory parser.

Brief Description of working environment, expectations from the company (in no more than 250 words): Colleagues and manager are generally positive and supportive. Proper guidance was given whenever it was necessary. Company expects the student to have basic knowledge about the field he/she is working on and expects the student to learn new things quickly.

Name: RAJAT Arora (2013A7PS104P)

Student Write-up

Short Summary of work done during PS-II: Deep learning, graphics driver modification, image processing.

Tools used (Development tools - H/w, S/w): Egl, Tensor flow, Opencv.

Objectives of the project: To detect corruption in rendered images, design interposer libraries for enabling debugging, fast image super resolution.

Outcomes of the project: Objectives achieved.

Major Learning Outcomes: Deep learning and graphics development.

Brief Description of working environment, expectations from the company (in no more than 250 words): Nice work environment, helpful co-employees.

Name: SAAD KATRAWALA (2013A8PS329H)

Student Write-up

Short Summary of work done during PS-II: My project was about ensuring that the flashing tools are executing in an orderly fashion and to validate the features built into these tools with the various use cases. Some of the features that involve creating signed and unsigned images necessary for flashing(writing to flash devices) and checking whether the desired images are created or not.Writing test cases to check for data corruption and boot-up. It involved devising a testing plan for these features and to implement them in a modular fashion to make it portable, thus making it easier for the developer verifying the new features.

Objectives of the project: To devise and implement the T124 flashing tools validation test suite.

Outcomes of the project: Discovered critical bugs and applied fixes to them thus improving the flashing tools that were crucial for NVIDIA's products.

Major Learning Outcomes: Shell scripting, Unit testing.

Brief Description of working environment, expectations from the company (in no more than 250 words): Everyone is very friendly and tries to help you pro-actively. Work timings are very flexible.

Name: SETHUNATHAN RISHABH C L SETHUNATHAN (2013A3PS220G)

Student Write-up

Short Summary of work done during PS-II: Preparing test benches and benchmarking tools for nvidia drivers.

Objectives of the project: To import testbenches.

Outcomes of the project: Implemented testbenches for nvidia drivers.

Major Learning Outcomes: Working of drivers and Advanced C.

Brief Description of working environment, expectations from the company (in no more than 250 words): The company culture is very good. All the employees are approachable for help and the work given is good.

Name: SASWAT KUMAR MISHRA (2013A8PS381P)

Student Write-up

Short Summary of work done during PS-II: Worked on a Machine Learning project to Cluster regression failures caused due to similar Cause of Failures. Data Extraction and Machine Learning workflow were created to extract feature values and run Unsupervised Machine Learning algorithms. Various Dimensionality reductions and clustering algorithm were explored. Finally PCA with DBSCAN were used as the algorithm of choice.

Tools used (Development tools - H/w, S/w): Python, Pandas, SciKit Learn and Jupyter Notebook.

Objectives of the project: Clustering of Regression Failures.

Outcomes of the project: A Data Extraction and Machine Learning Workflow to perform Bucketization of regression failures.

Major Learning Outcomes: Advanced Clustering Algorithms.

Brief Description of working environment, expectations from the company (in no more than 250 words): The Work Culture is pretty good. Employees are friendly and helpful.

Name: ABHISHEK SRIVASTAVA (2012B4A7756G)

Student Write-up

Short Summary of work done during PS-II: I worked under the Hardware Infrastructure (HWInf) team at Nvidia. My work centered on the development of a Resource Manager for internal usage. The Resource Manager can be partitioned into four components - Mapper, Predictor, Scheduler and Allocator. While Mapper breaks down a task into granular work units for simplified execution, Predictor uses that work unit decomposition to predict resources required for the task. It employs the intelligence of resident Artificial Neural Networks (ANNs) to perform the prediction. The prediction is passed to a First in First out (FIFO) based scheduler, which collaborates with the Allocator to optimally assign resources to a work unit. The Allocator also possesses a Contingency unit if the prediction fails to meet the requirements.

Objectives of the project: To create an efficient and intelligent Resource Manager.

Outcomes of the project: Created an Intelligent Resource Manager, which performed as desired.

Major Learning Outcomes: Application of Machine Learning Models, Integration of an isolated change with the production level code, Effective usage of Version Control Systems.

Brief Description of working environment, expectations from the company (in no more than 250 words): Nvidia has a very relaxed yet productive working environment, ideal for an employee. They keep the employees very satisfied through perks and HR interventions. I learnt to work under a corporate environment, how to sketch out a development plan given an experimental idea, how to effectively garner support from the available domain experts and peers, all of which should help me wherever I go.

Name: GAURAV GOYAL (2013A3PS417H)

Student Write-up

Short Summary of work done during PS-II: In NVIDIA I was part of system software team. The project involved creation of a infrastructure using Jenkins to automate testing for the team.

Objectives of the project: To develop a regression testing infrastructure.

Outcomes of the project: Developed the regression testing infrastructure.

Major Learning Outcomes: Learned about the tools and techniques used in Nvidia automotive department.Worked on different tegra chips from Nvidia.

Brief Description of working environment, expectations from the company (in no more than 250 words): My overall experience has really been fantastic, enriched with learning and fun.I has learnt a lot in the past five and a half months. The main reason for the learning was a great work environment in the organization. All the employees in the company were really helpful and were always willing to introduce new technologies to us. Overall, Nvidia helped a lot in improving my professional as well as technical knowledge.

Name: SREEJITH V .(2013A7PS038G)

Student Write-up

Short Summary of work done during PS-II: Creation of a distributed test infrastructure using Jenkins, she'll scripting and python.

Tools used (Development tools - H/w, S/w): Jenkins, shell, python.

Objectives of the project: Create a distributed test infrastructure to test developer code changes.

Outcomes of the project: Infrastructure created.

Major Learning Outcomes: Learned about the tools and techniques used in Nvidia automotive department.Worked on different tegra chips from Nvidia.

Brief Description of working environment, expectations from the company (in no more than 250 words): Very lineant, comfortable and encouraging.

Name: APOORV SHARMA (2012B1AA945H)

Student Write-up

Short Summary of work done during PS-II: I worked in the automotive multimedia department. I was primarily a part of the video processing team. I worked on NVIDIA specific applications to impart inter operability between two different softwares or sometimes two different operating systems. One unit (OS/software segement) would act as a producer which can decode a compressed video file and push or post the frames through a stream and the receiver side (the consumer, which can be another OS or a different software entity) would take up the frames, process it and render it on the display. In the process, I worked on JPEG encoding, decoding, memory management in various operating systems (QNX, Linux and Android).

Objectives of the project: CUDA is a parallel computing platform and application programming interface (API) model created by Nvidia. The primary goal of my project was to enable CUDA as a producer,that can read a video file and perform necessary operations and post it over a stream to other Nvidia APIs for display.

Outcomes of the project: I was able to successfully put in place an application that can use CUDA as an API to communicate with other Nvidia APIs mainly the NvMediaVideo and NvMediaImage APIs through a graphic software connection known as eglstream.

Major Learning Outcomes: The major outcomes include learning the process of image capture, the flow of data from the camera to the screen, use of specific tools to pass on image frames from one process to the other and data storage and compilation. Also, I got to learn about the working of CUDA which is a parallel computing platform and application programming interface (API) model created by Nvidia.

Brief Description of working environment, expectations from the company (in no more than 250 words): The work environment at Nvidia is one of the best in corporate world. It gives a pseudo-startup like feel. The employees are well taken care of, financially and physically. The level of flexibility is unparalleled. The work from home concept eases the stress levels; the additional benefits provided ensure a loyal employee-company relationship. The workplace setup also instills a feel of equality. The managers can be found sitting in similar cubes as the engineers. The team building activities (be it team

lunch / dinner) or department trips ensure a healthy bond and friendly relation with peers and seniors alike. The company meets all kinds of expectations one can have from a setup like Nvidia. The only thing that the company can improve upon (especially for new hires or interns) is a mini training program before being put to the main projects. There are various things here, which any outsider would not be familiar with. So coming into the main setup before any prior training can be off-putting in the initial months. A small training session to familiarize the person with the work will be of great help and it is never a bad thing to have an upper level picture of what is expected of us when we really get down to work.

Name: K SHIVAN REDDY (2013A3PS362H)

Student Write-up

Short Summary of work done during PS-II: I have worked on 2 things one is fixing misra violation and the other is implementation of rtsp protocol I had to implement rtsp protocol similar to open source live555 i was given some code and had to continue with the implementation i have implemented server part and could solve misra violations for 2 drivers.

Objectives of the project: Implementation of rtsp protocol.

Outcomes of the project: Transfer datat from sever to client.

Major Learning Outcomes: Could learn about git, networking related stuff.

Brief Description of working environment, expectations from the company (in no more than 250 words): Working environment was very good every one is very humble even though they have work they will clarify your doubt and will not get anger for small ,they have lot of patience,expectations we not that high they would encourage saying that it would take time initially since we are new it would take time and hierarchy is very less we can go and talk to any one directly and we can even message ceo directly .Finally to conclude this is place every one will like to work to.

PS-II Station: Nvidia Graphics - Hardware, Hyderabad

Student

Name: VARSHA VIVEK (2013A3PS006P)

Student Write-up

Short Summary of work done during PS-II: Develop a test framework for booting software tests.

Tools used (Development tools - H/w, S/w): Shell scripting.

Objectives of the project: Develop a test framework for booting software tests.

Outcomes of the project: Test framework to automate tests.

Major Learning Outcomes: Developing framework in Shell, Python.

Brief Description of working environment, expectations from the company: Working environment was good.

Name: ANIRUDDHA TVS RAO (2015H140048H)

Student Write-up

Short Summary of work done during PS-II: Worked with the Kernel-IO team at NVIDIA Hyderabad. The work done primarily focused on linux kernel level device drivers which involved writing, modifying pinmux drivers and the associated test files to provide support for upcoming releases of NVIDIA Tegra chip while aiding towards the closure of certain software bugs, generating new pinmux configuration files, writing mandatory pinmux sheets and updating GPIO wake tables.Also, worked for the closure of coverity issues belonging to the Kernel IO team which makes the kernel code base coverity compliant in order to enhance the trust among customers for NVIDIA Tegra products.

Tools used (Development tools - H/w, S/w): Perforce, Gerrit, Linux, Tegra development board.

Objectives of the project: Update the drivers to provide support for Nvidia Tegra chips.

Outcomes of the project: Modified kernel code base that suppports Android based Nvidia Tegra products.

Major Learning Outcomes: Gained knowledge regarding different subsystems typically present in a System on Chip, kernel level device drivers, shell scripting.

Brief Description of working environment, expectations from the company: Worked with the kernel-IO team at Nvidia Hyderabad. Working at NVIDIA helped me nurture my skills as an embedded system engineer. I got to learn several concepts related to embedded software development like kernel level device drivers, device trees, different substems present in a System on Chip which were minimally exposed to us as part of our curriculum. I could enhance my knowledge in C programming, Shell Scripting, Operating System and got used to version control tools like GIT. Also, being part of a product based company helps us to understand the entire product development cycle right from its conceptualization to the testing phase.The thing which I liked the most about NVIDIA is that, it doesn't provide any formal training to the interns. Instead, they are encouraged to explore things all by themselves. Nevertheless, employees are always open to discuss on the issues and doubts even if they doesn't concern their work. The most important thing i realized by working in an industry does that not know things is not a problem, but not trying to know things is definitely a problem. With minimal knowledge and grit to build something worthy, it is no hard for a person to stay in this industry for a long duration. Finally, my experience of working at Nvidia was very encouraging and informative which would help me to take an easy transition from academics to industry.

PS-II Station: Nvidia Graphics - Hardware, Pune

Student

Name: SUMIT KUMARDUBEY (2015H124071P)

Student Write-up

Short Summary of work done during PS-II: Iot setup, web designing, app development.

Tools used (Development tools - H/w, S/w): Angular2, androiud studio, xcode, arduino, zigbee, esp8266 wifi module.

Objectives of the project: Collect data using IOT Protocols and show them to the user on a website or a APP.

Outcomes of the project: website, Android and IOS App.

Major Learning Outcomes: Programming part of the project.

Brief Description of working environment, expectations from the company: I was disappointed as most of the work was not related to my field of study.

Name: Nisarg Shah (2013A7PS694G)

Student Write-up

Short Summary of work done during PS-II: I wrote tests for NVIDIA's Linux drivers, improved build infrastructure, and was involved in the regression analysis of numerous bugs with the Linux graphics driver.

Tools used (Development tools - H/w, S/w): NVIDIA GPUs, Perforce VCS, GNU/Linux, Bash and NVIDIA's in-house software tools.

Objectives of the project: Improving the Resource Manager module of NVIDIA's Linux graphics drivers.

Outcomes of the project: Three of the tests for the driver are live and are run against any change made to the driver. The improvements to the build infrastructure have made it possible to detect early breakages with the graphics driver with new Linux kernel releases.

Major Learning Outcomes: writing production quality code, NVIDIA's driver architecture.

Brief Description of working environment, expectations from the company: The team members are friendly and helpful. The company philosophy is to work as efficiently as possible (speed of light) and try to multitask. If you are blocked on some aspect of your project (you are waiting on someone), you'll be assigned some other work. Working hours are flexible and you have the option to work from home as well. You get to play around with NVIDIA's high-end GPUs (you are free to play games on them). For recreation, they have Table Tennis and Foosball tables. Free food (breakfast, lunch, snacks) and transportation. PPO chances depend on open positions within your team.

Name: harsh (2012B5A3658H)

Student Write-up

Short Summary of work done during PS-II: Working as a UI developer for an Nvidia's next-gen Application.

• Work involves application development using cutting edge web application technologies on both client- side and server-side.

• Application being developed can be used by gaming enthusiasts to improve their gaming experience and provides them with a better screen Interface.

Development technologies include: Angular JS, Node JS, JavaScript, HTML, CSS, C++, WebPack, Git, P4, Chromium Embedded Framework etc.

Tools used (Development tools - H/w, S/w): Visual studio, Atom.chrome dev tools, cmd, git, Nvidia gpu.

Objectives of the project: To develope Angularjs desktop application.

Outcomes of the project: Implemented features proposed by UX team.

Major Learning Outcomes: Angularjs, nodejs, HTML, CSS, c++ etc.

Brief Description of working environment, expectations from the company: It's good place to work for, learning curve is very high.You get the chance to innovate with your work.

Name: ANKIT AGARWAL (2013A7PS202H)

Student Write-up

Short Summary of work done during PS-II: RM PCIE component related work, adding functionality to an internal tool. Fixing a test and adding features to it.

Tools used (Development tools - H/w, S/w): S/w and H/w both used.

Objectives of the project: Bug fixes, tool features, test functioning.

Outcomes of the project: Success.

Brief Description of working environment, expectations from the company: Good environment and great benefits.

Name: HARSHIT JAIN (2013A7PS168H)

Student Write-up

Short Summary of work done during PS-II: Software development, code clean-up and bug fixing work on NVIDIA's Kernel Mode Driver for Windows.

Objectives of the project: Port 2 test scripts from a pre-Win10 environment to a Win10 environment, and refactoring of 2 structures to classes.

Outcomes of the project: Scripts successfully ported and are being used in virtual testing environment, refactoring still on going, will come useful for NVIDIA's next gen architecture.

Major Learning Outcomes: Learnt general code development workflows, more specifically, NVIDIA's driver development workflow.Learnt about practical applications of Software Engineering techniques and basic OS concepts.

Brief Description of working environment, expectations from the company: Good working environment, every intern is assigned a team randomly on Day 1. Team members are very helpful, and asking questions is encouraged. Usually, a team-wide meeting occurs weekly, and team status updates vary from team to team. Company expects interns to follow NVIDIA's culture of being proactive in their actions, and to take an active interest and ownership of their work.

PS-II Station: Philips Research India, Bangalore

Student

Name: MOMIN AFTAB MOHAMMAD AKIL NISHAT (2015H140030G)

Student Write-up

Short Summary of work done during PS-II: Image processing.Input MRI maps to be converted to color output maps.

Tools used (Development tools - H/w, S/w): Visual Studio, C#.

Objectives of the project: For better viewing and further diagnostic procedures

Outcomes of the project: Color maps obtained.

Major Learning Outcomes: Visual Studio Winforms, C #.

Brief Description of working environment, expectations from the company: Okay.

Name: KAKADE MAHESH LAXMAN (2015H140025G)

Student Write-up

Short Summary of work done during PS-II: The recent advances in machine learning have facilitated large scale analysis of medical data that have enabled prediction and prognosis of diseases. However, much of the data is available in the form of printed prescriptions and handwritten documents which needs to be digitized. In this work an attempt has been made to recognize and digitize medical documents using extensive template matching, neural network and other heuristic approaches and also stored these data in structured way. So that, it can be used for future references.In this scanned images of such documents are processed and characters are recognized using the opencv library of python programming language. The algorithm developed involves isolating required texts from entire images and then further extracting the data present in it. The extracted data will be kept in central database.

Tools used (Development tools - H/w, S/w): Opencv, Python 2.7.

Objectives of the project: To Implement a Methodology of Digitizing Paper Based Clinical Document by Optical Character Recognition and Handwriting Recognition.

Outcomes of the project: Printed character and handwritten digit recognition has been validated. Overall efficiency achieved for printed clinical data recognition is 75% and handwritten digits recognition is 82%.

Major Learning Outcomes: Learnt about opencv library of python programming, image processing applications in healthcare industry and on artificial neural network implementation.

Brief Description of working environment, expectations from the company: Work culture in Philips healthcare, Bangalore is quiet good and friendly. Philips Bangalore mostly works in MRI, data analytics and deep learning etc. My guide/mentor was quite helpful to me. He guided me properly each time.If you are very much interested in learning on medical image processing applications, machine learning and deep learning implementation one can go for it. There is lot of scope to learn, on how these healthcare industries works.

PS-II Station: PricewaterhouseCoopers (PWC), Gurgaon

Student

Name: SOURADEEP BHATTACHARYA (2012B5A3553P)

Student Write-up

Short Summary of work done during PS-II: Independent review of Energy Audit for Financial Year-15-16. Along with another fellow PS student, I was allotted a project in the energy and utilities team in the GRID division of PwC. We were primarily based out of Jaipur and our client were the three electricity discribution companies (DisComs) of Rajasthan, namely Jaipur, Ajmer and Jodhpur Vidyut Vitran Nigams. The project involved calculating the Aggregate Technical and Commercial (AT&C) losses for each of the 532 electricity subdivisions which the three DisComs comprised of. For this purpose, we downloaded required client data in Jaipur, visited subdivisions in various places in Rajasthan, and used models developed in MS Excel to calculate the AT&C losses for each of the subdivisions. We visited subdivisions in places like Jodhpur, Sawai Madhopur, Bhilwara, Tonk and Bundi.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: To calculate AT&C losses for each of the 532 electricity subdivisions in Rajasthan.

Outcomes of the project: Calculated AT&C losses for some of the electricity subdivisions in Rajasthan.

Major Learning Outcomes: Learnt about Power Distribution Sector. The work culture and expectations of the company was not as per my interests and thus I have learnt that consulting, at least power consulting is not for me.

Brief Description of working environment, expectations from the company: We were reimbursed for our hotel stays, food and travel expenses. Work environment was overbearing at times and the company frequently expected us to work late and during weekends. We later were shifted to a company flat in Jaipur where situation was worse. The major issues came due to lack of proper food during visits to distant subdivisions in backward villages especially the ones near Bundi. The work was also repetitive and uninteresting. A bulk of the time was spent in downloading data from client servers in Jaipur, which was a mundane and repetitive task. I expected to get acclimated to the corporate culture and consider it

as a possible career, but because we were at client site we didn't get office exposure but were exposed to the actual work culture of the company. I found a lot of sycophancy and superficial lecturing which was not great. Nevertheless, I have gained proficiency in MS Excel and explored a possible carrier option thoroughly by working in a live project at such an early level.

Name: VIRAJGANDOTRA (2013A2PS679P)

Student Write-up

Short Summary of work done during PS-II: Consulting to government agencies. I was involved with the market assessment of warehousing in a region and the feasibility analysis of a proposed inter state bus terminal.

Objectives of the project: Market assessment of warehousing in a region and the feasibility analysis of a proposed inter state bus terminal.

Outcomes of the project: Market assessment of warehousing in a region and the feasibility analysis of a proposed inter state bus terminal.

Major Learning Outcomes: Got a first hand experience of what consulting work can be like. Got insights into how major infrastructure projects are planned.

Brief Description of working environment, expectations from the company: Good working environment as such. But at times it's difficult to get hold of your managers to get your work verified.

Name: KARTHIK PRASAD (2013A4PS236G)

Student Write-up

Short Summary of work done during PS-II: Worked on various projects.

Objectives of the project: Assessment of Future Aviation Opportunities in India.

Outcomes of the project: Passenger Traffic forecasts.

Major Learning Outcomes: First hand knowledge of the consulting industry.

Brief Description of working environment, expectations from the company: Great Company.

Name: JEFFREY GEORGE (2012B2A4710P)

Student Write-up

Short Summary of work done during PS-II: The assigned project was assessing impact of GST on manufacturing in India. The focus sectors for impact assessment were textiles, automobile, electronics and food processing industries.

Objectives of the project: Asses impact of GST on manufacturing in India.

Outcomes of the project: Understanding of current and GST tax structures, values chains of focus sectors and impact of GST.

Major Learning Outcomes: Working in a consulting position.

Brief Description of working environment, expectations from the company: Comfortable and flexible working hours. Company expectation was a report on GST and its impact on manufacturing in India.

Name: THOLE PARVA AMIT (2013A4PS134G)

Student Write-up

Short Summary of work done during PS-II: It's a management consultancy firm. Work is related to market research, data analysis and data collection.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Build cost model estimating transportation cost of container.

Outcomes of the project: Freight rates across road, rail and sea modes.

Major Learning Outcomes: Estimation techniques, soft skill development.

Brief Description of working environment, expectations from the company: The company expects you to assist the other team members in their work and finish the project that you are allotted.

PS-II Station: PricewaterhouseCoopers (PWC), Mumbai

Student

Name: RACHIT GUPTA (2013A3PS201G)

Student Write-up

Short Summary of work done during PS-II: During the tenure of PS-II, I worked on various projects, as I used to get a different project almost every 3-4 weeks. These projects generally involved preparing case studies, reports, collecting data and conducting due-diligence. I was also asked to prepare a financial statement. Thanks to the video courses provided by BITS, I was able to learn some excel tricks which were new to my colleagues too. I primarily worked on infrastructure and energy related projects. Earlier I was only given due-delligence work. While doing those projects, I also developed my grasp over infrastructure projects and developed my knowledge of finance and learnt how to prepare case studies. Once I did that, I was given really interesting and challenging projects, which I thoroughly enjoyed. Currently I am working on another fantastic project that requires me to combine my knowledge of electrical engineering with newly acquired knowledge of finance. Basically, you will be given a taste of almost all types of works which a consultant does for clients.

Tools used (Development tools - H/w, S/w): MS Excel, PowerPoint and CapitalLine.

Objectives of the project: Study of Infrastructure and Energy.

Outcomes of the project: Internal Study Reports and Client Deliverables.

Major Learning Outcomes: Understanding of Indian and Global Energy and Infrastructure Challenges and Solutions.

Brief Description of working environment, expectations from the company: The work-environment is really nice. People are warm and friendly. The work you get depends on how much initiative you take. As the work for trainees is generally without deadlines, the more quickly you submit the work, the more work you get. A couple of times, I even worked on Saturdays but that was purely voluntary. However, please note that managers might not feel incentivized enough to give you a project as all team members are MBAs and can handle projects more efficiently than engineering undergrads. Therefore, my manager first gave me due-diligence works and as I developed my knowledge of finance, I was given

independent studies. The learning curve is brilliant. I learnt so many new and exciting things almost every single day. I am extremely grateful to BITS and the PS team for this opportunity.

PS-II Station: QUALCOMM INDIA PRIVATE LIMITED, Bangalore

Faculty

Name: Rekha.A

Comments: The advantage of practice school is making students comprehend the industry and its needs even before going to a job and build their career. It helps in enhancing their skills by working on a live project but also prove advantageous to the organization by their innovative nature. The Students come from various discipline and work in various fields. By guiding the students from various branches of engineering like mechanical has given me an insight into the nature of work going on and the technology used. The students were given the skill set gap training so they are prepared before they come for the internship program. The students worked on various projects on image processing, embedded systems, physical design, communication, tracking of objects in motion, quality and reliability tests for the products, design of thermal management systems , verification and Validation etc. Interaction with the mentors helped in identifying the skill gap courses and set of basic courses need to work on the projects and the same was communicated to the students to refresh such courses before they join for internship. This helped the students to quickly ramp up with the work and start contributing towards the project. Also shared some of the e-books for system verilog, video basic books. PS II was truly enriching for the students as they got an insight into the latest tools technologies being used in the industry by working on the live projects .

Student

Name: SUVIJAIN (2015H123159P)

Student Write-up

Short Summary of work done during PS-II: Majorly, I worked with the automation team and learned their tasks. I worked on automating the architecture migration, adding power rails and IO tracks in the cell etc. I also got an hands on experience of the working of circuit team while working with them for a short duration. With architecture team I learnt variations in circuits with different drive strengths by performing pre and post layout simulations.

Tools used (Development tools - H/w, S/w): Cadence virtuoso, Octave, Perl, SKILL, Unix.

Objectives of the project: To learn the flow of the standard cell from circuit to layout.

Outcomes of the project: Learned about the flow of standard cell. Delivered some automation scripts used in real projects of the organization.

Major Learning Outcomes: SKILL and PERL language, unix platform, the work flow of the team, industrial way of doing things.

Brief Description of working environment, expectations from the company: The working environment is extremely friendly. I got to work in so many teams of standard cell and hence got to interact with a lot of people. The focus of my internship was on the learning rather than delivering the work.The regular outings and team lunches made the work relaxing. The intern outing made us interact with other interns as well.

Name: SHINDE KIRAN NARAYAN SUNITA (2015H123036G)

Student Write-up

Short Summary of work done during PS-II: In first we had been told to study shell, TCL , perl scripting , physical design , layout rules ,antenna rules , static timing analysis. In third week , we had been given problem statements to find out 1)whether width and height of the chip core are according to guidelines or not 2)whether spacing between two macros are according to guidelines or not 3)whether spacing

between core boundary and IO boundary is according to guidelines or not using TCL scripting. From second month we focused to reduce routing and timing congestion. Then we studied floorplan flow and placement & routing flow.Each flow is divided into 8-10 stages.This each stage had some significance in the physical design. Floorplanning flow includes defining core and IO boundary with certain area given to that block. We need to give partition of our rtl design to Floorplan flow. Then according to sub blocks, macros and standard cell pins connections we need to place macros and sub-blocks. After this we need add blockages around macros, place physical cells. After foorplan we gave database to PnR tool which starts with placement then clock tree synthesis , post clock tree synthesis , routing and post routing.We repeated this procedure several times to improve floorplan and placement in order to reduce routing and timing congestion.

Tools used (Development tools - H/w, S/w): Innovus Implementation system, ICC2 compiler.

Objectives of the project: To optimize physical design by reducing routing and timing congestion.

Outcomes of the project: By experimenting floor-planning design I able to reduce routing and timing congestion.

Major Learning Outcomes: Shell, TCL, perl scripting, dbget commands, Floorplanning and PnR flow.

Brief Description of working environment, expectations from the company: In my internship duration I am having good experience. Things which I like are food, learning resources, facilities, people around in the company. Along with work we done we had "Dragothon event" where we worked on dragonboard 410c. This event gave great experience of team work .We could share our knowledge among teammates. I like working environment in the company.

Name: SHIKHAR BHARDWAJ (2015H123154P)

Student Write-up

Short Summary of work done during PS-II: In the last 5 months at Qualcomm, I spent the first few weeks in learning System Verilog, UVM, Version Control Tools, Company's specific verification environment and Linux Operating system. I also attended some training sessions for the same. The first task I got was to debug certain issues in a bus system as a part of the first milestone of the ongoing project. For the second milestone, I was timely able to deliver 6 test cases for the IP allotted to me. Meanwhile, I was also attending Design Training Series. I took part in a 2 day event called "Dragathon" where we were given a Qualcomm's small computing board with a Snapdragon processor and certain peripherals and sensors. Our team for the event had to come up with a working model on one of the given themes and we implemented a "Smart Refrigerator" with communication to an Android app via local network (Wifi). Finally, as my internship was going to end I worked off the project on Test Bench Cleanup and Enhancement.

Tools used (Development tools - H/w, S/w): VCS, Modelsim, Verdi, Clearcase and Clearquest.

Objectives of the project: To look at the hardware specification. Write a verification plan.Write stimulus vectors. Manually review the resulting log files and waveforms to make sure that the design is correct.

Outcomes of the project: Became familiar to Qualcomm specific verification environment. Managed regressions for the team. Learnt debugging skills. Learnt debugging tools (Verdi), languages (System Verilog), methodologies (UVM) and Version Control Tools.

Major Learning Outcomes: Corporate Culture. Complete Verification Flow specific to the company's norms. Interaction with other teams working in parallel.

Brief Description of working environment, expectations from the company: The working environment has always been great. The last 5 months have been one of the best opportunities for me to get an exposure to the Verification Domain. My mentor was very considerate to allot enough time for me to learn and become familiar with the concepts of System Verilog and UVM. He always made sure that I am equipped with enough resources to get an understanding of the Company's specific verification environment. My team mates were always supportive to help me get through whenever I faced some issue regarding the company's tool flow. Working at Qualcomm gives a sense of how working on

Industrial Projects is different from working on Academic Projects. It was a nice opportunity to work with great minds and learn what is needed to make oneself suitable for the company.

Name: VIPLAV KUMAR SINGH (2015H103084P)

Student Write-up

Short Summary of work done during PS-II: I worked on the development of benchmarking storage and retrieval tool which included enabling of various kinds of workloads, data population of the workloads and the comparison of the workloads which helped in optimization process of applications running on different platforms. The goal was to automate the process of application optimization by integrating the developed tool with Jenkins using Restful web service. Profiling was done using perf tool to find the hot functions in the application code base.

Objectives of the project: To develop a benchmarking storage and retrieval framework.

Outcomes of the project: A tool for benchmarking storage and retrieval was developed and integrated with Jenkins using Restful web service.

Major Learning Outcomes: profiling using perf tool, kernel optimization.

Brief Description of working environment, expectations from the company: Qualcomm provides a very friendly environment to work with. My mentor and other team members were very supportive. I didn't encounter any work pressure at all and was provided enough time to learn the concepts which made the work easier. The events organized by Qualcomm, especially Dragathon were full of fun and learning experience.

Name: ASHUTOSH PUROHIT (2015H123164P)

Student Write-up

Short Summary of work done during PS-II: I worked with physical design team. The major part of my work was automating the utilization calculation of the blocks of a chip, with this I got some more small tasks as well.

Tools used (Development tools - H/w, S/w): Innovus.

Objectives of the project: Framework of Chip Size Standardization.

Outcomes of the project: The process of generating chip utilization was automated and the process can be done by any one with required inputs.

Major Learning Outcomes: Basics of Physical Design, I got to learn two scripting languages Perl and TCL.

Brief Description of working environment, expectations from the company: It is a great work culture in Qualcomm there is no bondation of working hours as you are completing your task on time. They treat interns as an employee so we get a good experience of live project and the importance of dead lines.

Name: RAHULSHARMA (2015H123160P)

Student Write-up

Short Summary of work done during PS-II: Worked on automation in memory characterization. Automating various tasks for ease in characterization flow. Implementing trend checker for checking the authenticity of results produced by the simulator.

Tools used (Development tools - H/w, S/w): Perl, Finesim, Customsim.

Objectives of the project: Automating various tasks in memory characterization process.

Outcomes of the project: Wrote Perl scripts for highlighting the version of simulator used for every library generated along with other useful data related to various modes like delay, leakage etc. Trend checking in SRAM. LVLIB verification flow implemented.

Major Learning Outcomes: Perl, writing SPICE stimulus for various circuits, various parameters and terminologies related to SRAM were studied.

Brief Description of working environment, expectations from the company: Qualcomm's working environment is great. People working here are very friendly and the entire company has a positive vibe. Lot of facilities are provided for the employees which makes working here very comfortable. Working here is both fun and rewarding.

Name: PRATIKDEVIKAR (2015H124066P)

Student Write-up

Short Summary of work done during PS-II: I had to work on boot time optimization of location based services.

Objectives of the project: Boot time optimization.

Outcomes of the project: Reached a goal of 12 seconds.

Major Learning Outcomes: Understood the basics of Linux boot process.

Brief Description of working environment, expectations from the company: I has been a nice experience in Qualcomm till now. Here we find an Open door policy, because of which new-comers find it easy to approach anyone regarding their doubts. Also because of flexible timings, you don't get bored of the daily office work. You can work at any time and for any hours. Also the facilities which Qualcomm provides to its employees are comparable to none.The one thing which I will miss will be my team and my mentor who was always there clearing my doubts inspite of having her regular work pressure.

PS-II Station: QUALCOMM INDIA PRIVATE LIMITED, Hyderabad

Student

Name: DEBANKAN ROY (2015H140120P)

Student Write-up

Short Summary of work done during PS-II: My work was mainly based on compiler testing and debugging. I was responsible to bring out the first build of a compiler for a Qualcomm private core compatible to run on windows. My role was to debug and test the job done bu the compiler, its correctness and stability. I needed to patch the codes as well as the tests so that there is a flawless run in windows.

Tools used (Development tools - H/w, S/w): Visual studio, Linux, Windows other Qualcomm's private tools.

Objectives of the project: To get a stable version of a compiler for a core in Windows.

Outcomes of the project: Successfully got the compiler build capable to run in windows.

Major Learning Outcomes: Learned about Qualcomm's Compiler department, problem reporting, gained programming knowledge in Python, c, c++, Debugging, Testing.

Brief Description of working environment, expectations from the company: Working environment in Qualcomm is very nice for any kind of freshers and experienced candidate. Most of the employees working in Qualcomm is very knowledgeable and helpful in nature. Under their guidance ramping up in a particular department is so easy. I personally can say my team was very encouraging and motivating in any work which I want to do. The most notable thing in Qualcomm is the Employee Performance appraisal. Every single contribution of an employee is noted here and he will get the appreciation at the end for his work. Here is no strict rule of office timing, everyone will feel his responsibility of his position and work who joins Qualcomm. Qualcomm tries to give his employees the best facility and expects a good level of contribution from them. I expect qualcomm to keep on as they are and contribute more to the new technology.

Name: K JEEVAN KUMAR (2015H124074P)

Student Write-up

Short Summary of work done during PS-II: Understood how the firmware works in GERAN and wrote similar scripts in OCTAVE, which can be used for debugging any issues in future.

Tools used (Development tools - H/w, S/w): s/w.

Objectives of the project: To learn how any tech works and study on acquisition channels in GSM.

Outcomes of the project: Successfully wrote OCTAVE scripts for acquisition channels like FCCH, SCH. which really help in understanding the process better and also helps in debugging.

Major Learning Outcomes: How different fading and noise profiles are handled is a great learning.

Brief Description of working environment, expectations from the company: Work Culture is very embracing, people are completely involved in the work and highly friendly. They expect us to be.

Name: SIDDHARTH SHANKAR SWAIN (2015H103096P)

Student Write-up

Short Summary of work done during PS-II: Implementation of Just-in-time LLVM compiler for Hexagon DSP and 2) development of checkers for LLVM-clang static analyzer. The main aim of this project is providing “just in time” compilation support to LLVM compiler for Hexagon DSP. It involves deciding and deferring until runtime to compile modules and functions as and only when they are called. We are using “On request compilation” JIT for JIT compiling Hexagon code as it supports lazy compilation cross compilation and remote JITing. The major focus is on improvement of startup time of compilation and include some runtime optimizations. 2) The main aim of this project is improving compiler security by implementation of various checkers in clang static analyzer which can find out the vulnerable functions and throw appropriate warnings before the compilation process.

Tools used (Development tools - H/w, S/w): Hexagon linux machine, LLDB (debugging), llvm-rtdyld, llvm-lit, llvm-mc, llc, lli. Clang static analyzer (compiler security).

Objectives of the project: 1) The main aim of this project is providing “just in time” compilation support to LLVM compiler for Hexagon DSP. It involves deciding and deferring until runtime to compile modules and functions as and only when they are called. We are using “On request compilation” JIT for JIT compiling Hexagon code as it supports lazy compilation cross compilation and remote JITing. The major focus is on improvement of startup time of compilation and include some runtime optimizations. 2) The main aim of this project is improving compiler security by implementation of various checkers in clang static analyzer which can find out the vulnerable functions and throw appropriate warnings before the compilation process.

Outcomes of the project: 1) Orc Just-in-time LLVM compiler developed for Hexagon DSP 2) Checkers implemented for LLVM static analyzer.

Major Learning Outcomes: Compiler design, linking, relocation, code generation, just in time compilation, runtime optimizations, software security, static analyzers and address sanitizers.

Brief Description of working environment, expectations from the company: Qualcomm's environment is very friendly. You can walk on to anyone's desk to ask for help. Everyone is very helpful and patient listener. My mentors were from Austin and we had remote discussion and meeting. But instead of that they were so helpful that they were available for discussion and help at midnight also (midnight according to USA timings and daytime in India). I got to work one of the best of manager in Qualcomm i.e. Sushim Shrivastava. He was very helpful and also had enough courage to put interns like us in the new LLVM compiler team at QIPL which started with two interns from BITS Pilani. The project work assigned to me had both research and development components. I had to read some research papers, frequently interact with LLVM community people for the project work which was an enriching experience, as we got to know many highly qualified LLVM developers around the globe (i had frequent interactions with Lang Hames(software engineer, Apple), Krzysztof who are stalwarts in LLVM compiler field). It was really an engaging and beautiful experience. In addition to that there were lot of team outings, team events, intern outings and hackathon (Dragathon). So to sum it up it was the best company i could ever have and the best work i could have ever got.

Name: RAHUL GUPTA (2015H124067P)

Student Write-up

Short Summary of work done during PS-II: My work was to automate the manual testing of WLAN. I made lots of apps on Android studio. I developed test cases to check various metrics of WiFi connections. I made a script according to which all the test cases will be installed automatically on multiple devices at the same time and run at a given time simultaneously on the devices and check how much time it takes to run all the test-cases. While I was able to learn a lot from normal office life, my two most memorable days were in the event Dragathon. me and my team developed a project to detect alive people in a disaster situation. My role was to develop a client-server communication between dragon board and my computer .I have implemented the image processing algorithm in the dragon board.

Tools used (Development tools - H/w, S/w): C, C#, Java, Android Studio, OS (ubuntu, debian), Dragon Board.

Objectives of the project: Automate the manual testing in Wlan.

Outcomes of the project: Automation of manual testing was achieved. Test cases were developed successfully.

Major Learning Outcomes: My coding skills enhanced a lot. I just not become good at one thing but also on different areas on coding like memory management, optimizing performance of the algorithm.

Brief Description of working environment, expectations from the company: I can honestly say that my time spent interning with Qualcomm resulted in one of the best 6 months of life. Not only did I gain practical skills but I also had the opportunity to meet many fantastic people. The atmosphere at the Hyderabad office was always welcoming which made me feel right at home. Additionally, I felt like I was able to contribute to the company by assisting and working on projects throughout the internship. Overall, my internship at Qualcomm has been a success. I was able to gain practical skills, work in a fantastic environment, and make connections that will last a lifetime. I could not be more thankful.

Name: ANUJAKALEKAR (2015H140121P)

Student Write-up

Short Summary of work done during PS-II: I am part of multimedia test framework project in IOT-Apt. I have developed the framework as well as automation scripts around it.

Tools used (Development tools - H/w, S/w): C, python.

Objectives of the project: Automating the test framework and further enhancements in some other frameworks.

Outcomes of the project: The framework was deployed to other teams to use.

Major Learning Outcomes: Knowledge about parameters to be considered while developing framework.

Brief Description of working environment, expectations from the company: Work environment is healthy in Qualcomm. One gets to learn many technical things as well as your soft skills will improver over the time. Dedication toward your work is the key factor which will be monitored.

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Name: PAWAN AASUDARAM BUDHWANI (2015H103022G)

Student Write-up

Short Summary of work done during PS-II: Worked on Inhouse DCC Device Driver to check Resource Power Management (RPM) dumps and Analysis of DDR on the basis of RPM clock.

Tools used (Development tools - H/w, S/w): SNAPDRAGON (660) device, JTAG, T32.

Objectives of the project: DDR sanity check using RPM.

Outcomes of the project: Captured-Compare of DDR data from DDR between every clock is achieved.

Major Learning Outcomes: Linux Device Drivers, ADB Shell , Python Scripting.

Brief Description of working environment, expectations from the company: Healthy working environment, Mentor, Manager and Teammates are always there to help. Sincere work is expected.

Name: ANIKET MISRA (2015H140123P)

Student Write-up

Short Summary of work done during PS-II: Worked on Inhouse DCC Device Driver to check Resource Power Management (RPM) dumps and Analysis of DDR on the basis of RPM clock.

Tools used (Development tools - H/w, S/w): SNAPDRAGON (660) device, JTAG, T32.

Objectives of the project: DDR sanity check using RPM.

Outcomes of the project: Captured-Compare of DDR data from DDR between every clock is achieved.

Major Learning Outcomes: Linux Device Drivers, ADB Shell, Python Scripting.

Brief Description of working environment, expectations from the company: Healthy working environment, Mentor, Manager and Teammates are always there to help. Sincere work is expected.

Name: NAGASHREE S (2015H124032H)

Student Write-up

Short Summary of work done during PS-II: In the internship, I was allotted in "Bluetooth core stack development" team. Initially when I joined, I was asked to go through the BT architecture, some of the source codes related to my project. After a month or so, I was involved in the main project. This project involved in making the BT compatible for the Android-O architecture. The BT tools interact with the BT Chip directly by using the BT library. Before Android O, the tools used to access library to, i. Power on and off the SoC. ii. Creation of socket to communicate with transport layer and Bluetooth Controller. In Android O, the Process library is developed to access vendor specific components. In the process layer, the commands and the data's are analyzed and channeled to the BT Chip and vice versa. The Process layer code is developed, which interacts between the tools and the BT Chip. It is built as a shared library and is linked to the tools. i. The tools will use the APIs exposed by the process library to initialize and close the process. ii. The tools send command/data to the process through socket communication. iii. When the event is received by the process, it will send it to the tool through socket communication. The

Process code library was tested on the device and merged, which is now ready to be used by the costumers.

Tools used (Development tools - H/w, S/w): BT related tools, C++.

Objectives of the project: Objective of the project are: Before in Android O, the tools used to interact with the BT chip using BT Library. The tools used to access library to, i.Power on and off the SoC. ii.Creation of socket to communicate with transport layer and Bluetooth Controller. •In Android O, the Process Library is developed to interact with the Chip. In the process layer, the commands and the data's are analyzed and channeled to the BT Chip and vice versa. •The main objective is to make the tools compatible with the Android O architecture.

Outcomes of the project: •A Cpp process code was developed, and was executed as a shared library.

•This library is linked with the tools and the tools interact with the BT Chip.

•Different test cases were run on the device to indicate the successful implementation.

•The code is also tested for memory leaks.

•The code is merged and is ready to be used by the customers.

Major Learning Outcomes: 1. Understanding the source code. 2. Analyzing the working of tools. 3. The format of each packets (Command, ACL, SCO, Event packets) 4. Socket pair communication. 5. Thread and multithread programming. 6. Handling callback functions. 7. Cpp programming.

Brief Description of working environment, expectations from the company: The work culture in Qualcomm is very good and more than that it is flexible. The people here are very friendly and helpful. My mentor and manager and also my whole team is interactive and supportive in very aspect. As learning point of view, we will be exposed to the piece of work and people will be around us. So whenever we get stuck with the doubts, we can easily get it cleared. As a part of learning process, the HR’s had organized the interactive sessions with the experienced employees in the company. They shared their journey in QComm, the growth of the company, the hurdles they faced etc., this motivated

and inspired us. We were taken to an NGO, which was majorly sponsored by the QComm employees. We had a great time spending there. We also learnt as how the less privileged people are struggling for their basic needs. As a part of recreation, we were taken to the “WonderLa”.A event called “Dragathon” was organized. In this event, we were given the dragon boards and to build an innovative idea within 48 hours. This was a great event organized for the interns. So, overall the work environment is good to work. All the departments, like IT department collaborate to support us in any difficulties.

Name: POOJA UPADHYAY (2015H124070P)

Student Write-up

Short Summary of work done during PS-II: Development of a new feature for Modem which will allow us to capture raw ADC output data for analog signal analysis. New APIs were added in the existing code to make this feature run when required. Project 2 was to make Timeline showing different Registers, their address, Length, Time of start and other required things so that they can directly find the error instead of manually searching for register in a csv file which is generated once the code runs on device.

Tools used (Development tools - H/w, S/w): Source Insight, Araxis Merge, Linux Harvester, QXDM, and some other softwares internal to Qualcomm for running code on device.

Objectives of the project: To develop a new feature for Modem as per the requirements of Firmware team.

Outcomes of the project: Using this now we can directly capture ADC output for analog signal analysis.

Major Learning Outcomes: The actual working of codes on device and how RF team works.

Brief Description of working environment, expectations from the company: In Qualcomm the working environment is really nice. Everyone is ready to help you out if you are curious to know things.

Name: SHIVAM PATEL (2015H103020G)

Student Write-up

Short Summary of work done during PS-II: Automation using python script.

Tools used (Development tools - H/w, S/w): Python.

Objectives of the project: Adb Logparser: To analyse adb logs and find errors.

Outcomes of the project: Automating analysing adb logs process to reduce debugging process time.

Major Learning Outcomes: Learn python and how to do automating process.

Brief Description of working environment, expectations from the company: Working as intern at qualcomm gives me experience of corporate life. When you are working on project I learn how to integrate with different teams and get help from people.

Name: ROMIT MAHESHWARI (2015H140047H)

Student Write-up

Short Summary of work done during PS-II: I am working In TZ team of ssg qualcomm india. My work is mainly on device drivers, assembly level programming and c, python languages. My work is make the code target independent and plug n play in nature.

Tools used (Development tools - H/w, S/w): T32, scons.

Objectives of the project: Flexible HWIO (plug n play).

Outcomes of the project: Code become target independent, become optimum and less time require for new build.

Major Learning Outcomes: Boot flow of the mobile, difference between secure and non secure apps and world.

Brief Description of working environment, expectations from the company: working environment is good here in Qualcomm. You can go to anyone for small issues. Everyone is ready to help here.

PS-II Station: Qualcomm India Pvt Limited, Chennai

Mentor

Name: Harish Gopalakrishnan

Designation: The student was able to catch up very quickly the concepts and also was able to come up with suggestions. The concept of low power design techniques need to be included in the courseware as that would create more prospects for the students to land up in jobs with Qualcomm, Nvidia, Intel etc.

Faculty

Name: Dhanashree N P

Comments: Qualcomm India Pvt. Limited - Qualcomm is an American multinational semiconductor and telecommunications equipment company that designs and markets wireless telecommunications products and services. Atheros is a developer of semiconductors for network communications, particularly wireless chipsets. On January 5, 2011, Qualcomm had agreed to a takeover of the company. When the acquisition was completed on May 24, 2011, Atheros became a subsidiary of Qualcomm operating under the name Qualcomm Atheros. Qualcomm India Pvt. Ltd., Chennai Development Center (CDC) was formed after this acquisition. Hence most of its works are in wireless chipsets. The broad areas in which Qualcomm India Pvt. Ltd., Chennai Development Center (CDC) operates is Mobile Station Modem (MSM)/Mobile data modem (MDM). The teams in Chennai develop products ranging from commercial Access Points (APs), enterprise grade APs, power line communication products and even the cutting edge research on nanocells and interoperability of cellular systems and 802.11 standards. This is the first time students were taken as part of PS-II program in the Chennai development center. The students alloted were in the final semester M.E Micro Electronics and M.E Communication Engineering that satisfied the course requirements. Other requirments included being a quick learner, team player and problem solver.

Student

Name: SRIGANESH RAJENDRAN (2015H124065P)

Student Write-up

Short Summary of work done during PS-II: As part of Test Automation team, I was assigned with various tasks like creating applications for automating few internals tools and other utility applications. I was also involved in a project which aimed at bringing in Machine learning in improving regression testing.

Tools used (Development tools - H/w, S/w): C#, Python.

Objectives of the project: Bring in automation where ever possible to reduce human efforts so that those efforts can be focused where the actual needs are.

Outcomes of the project: Basic framework which can recommend test cases for during testing of intermediate meta builds.

Major Learning Outcomes: Working in tandem with a large team with many code contributors.

Brief Description of working environment, expectations from the company: I was stationed at Qualcomm, Chennai during my PS2 and my experience over here was just great. Qualcomm is known for its innovation and this division at Chennai is no exception. This place has the best combo -brilliant people and an open culture where one can walk up and pick anyone's mind and people would always be zealous to explain things to you. My team in particular was helpful and extremely friendly in guiding me with during initial transition phase from student to being part of an organisation and then was there to help me out whenever I was stuck at something during the whole time of the internship.

Name: ARCHANA CHANDRAN (2015H123162P)

Student Write-up

Short Summary of work done during PS-II: The Project I was put in is basically about developing Next Generation SoC Chipset.I worked in a team which takes care of the Design aspects in terms of Power.

Tools used (Development tools - H/w, S/w): Qualcomm Propreitary front end design tools for structural power Verification-structural verification and Power Estimation (dynamic power estimation, leakage power estimation).

Objectives of the project: Low power Designs are need of the day because of high device density and high frequencies of operation combined with more consumer devices in portable domain and effects on environment. Every device is constraint by power and power has become a universal currency. To come up with better designs in terms of low power.

Outcomes of the project: The project is still in design process .It is going to be part of many handsets yet to come.

Major Learning Outcomes: Throughout the course of the internship I got an opportunity to know more about the front end design in VLSI domain .It is a great experience to see things in real time what you have learned in theory .I also got an opportunity to see what all groups other than design team work towards the SOC design flow to bring out a product to the market.The main learning during the internship was to get a hands on multiple front end tools in real time project both in power verification and power estimation.

Brief Description of working environment, expectations from the company: A fast paced company which takes good care of its employees.

PS-II Station: Red Pine Signals, Hyderabad

Student

Name: ARATHI KRISHNA S (2013A3PS135G)

Student Write-up

Short Summary of work done during PS-II: Designed a low power measurement board.

Tools used (Development tools - H/w, S/w): Cadence Spectre, Matlab, Pspice.

Objectives of the project: Develop a power measurement board that has an accuracy of 10% at a current of 100nA.

Outcomes of the project: The design checks out on paper. Simulation is under way.

Major Learning Outcomes: A good knowledge of the design process, more in-depth knowledge of analog design.

Brief Description of working environment, expectations from the company: A very good learning environment, work is challenging and relevant.

Name: KAKADIA RAVIKUMAR RAGHAVBHAI (2015H123037G)

Student Write-up

Short Summary of work done during PS-II: Project 1-- Fully Differential OTA for Switched Capacitor Circuit Appliction. Project 2 --Bandgap reference circuit for the reference voltage of 200mV , Operating between operating voltage 0.4V to 1.5V for the temperature range of -40 ℃ to 125 ℃. Total current in the circuit should not be more than 30nA and temperature coefficient of this Circuit should be less than 100ppm.

Tools used (Development tools - H/w, S/w): Cadence virtuoso.

Objectives of the project: To learn about an Amplifier design for particular Gain, Phase margin, bandwidth and noise power.

Outcomes of the project: Design an amplifier with the gain of 84 db and UGB of 37 MHz. Phase marig is 78° and slew rate of 37 (V/usec).

Major Learning Outcomes: About OTA amplifier and bandgap reference circuit.

Brief Description of working environment, expectations from the company: All team member and also Tema manager are very supportive throught out my project work.They will Give you enough time and support to complete to your project work.They will explain you each and every small thing whenever you will be stuck down.Expectations from the company --They just want you to know the basic fundamental concepts of your field. They are very punctual in terms of office timing.

PS-II Station: Reflexis Systems India Pvt Ltd, Pune

Student

Name: ADITYA NARAYAN RAMAN (2013A8PS699G)

Student Write-up

Short Summary of work done during PS-II: Front-end feature development for company's flagship web application. Introducing, testing and preparing for adoption of a Behavior Driven Development framework for developers working on the application.

Tools used (Development tools - H/w, S/w): AngularJS, jQuery, Java, Spring framework.

Objectives of the project: Feature development and adoption of Behavior Driven Development paradigm.

Outcomes of the project: Requested features developed and launched. Proof of Concept of Behavior Driven and Test Driven Development frameworks approved.

Major Learning Outcomes: Proficiency in AngularJS and Familiarity with the Spring Framework.

Brief Description of working environment, expectations from the company: Outcome driven environment. Friendly Co-workers. Enthusiastic mentors. Depending on the team, you will be expected to get hands-on with the company products almost as soon as you join. Overall, healthy learning environment, and a little initiative from you can enable you to acquire quite a bit of expertise. Expect late hours if working on critical application components.

Name: PRATIK KUMAR (2012B5A8557G)

Student Write-up

Short Summary of work done during PS-II: 1. Created a marker calendar for CRUD operations on calendar via events with support for advanced repeating events.2. Worked to develop kernel - a unified gateway for secure logging in. 3. Created a page using d3 charts to compare data graphically.

Tools used (Development tools - H/w, S/w): Eclipse IDE, Aqua Data Studio, web Browsers.

Objectives of the project: 1. Marker calendar for CRUD operations 2. Kernel - A unified gateway for login 3. Graphical page for comparing of data.

Outcomes of the project: 1. Marker calendar for CRUD operations 2. Kernel - A unified gateway for login 3. Graphical page for comparing of data.

Major Learning Outcomes: Learnt to use 3rd party code in project, JAVA, D3 charts and graphs.

Brief Description of working environment, expectations from the company: Good environment, approachable seniors/supervisiors/coworkers, not good food.

PS-II Station: Robert Bosch Center for Cyber Physical Systems, Bangalore

Student

Name: ADARSH AGARWAL (2013A3PS139G)

Student Write-up

Short Summary of work done during PS-II: This centre is involved in smart cities projects. The work allotted to me was of media streaming over a network. They wanted to build a test-bed with several IP cameras. My work was to setup the streams from the IP cameras for live viewing as well as archiving. Also I had to design several webservices for authentication and as a client-server architecture where the server side script would reside in the middleware of the project and client would denote the third party users.

Tools used (Development tools - H/w, S/w): Python, Linux Scripting, Wowza Streaming Engine, ffmpeg, gstreamer, java, nodejs, http communication.

Objectives of the project: To develop a client-server architecture for communication with the IP cameras in the Smart City Test Bed project and also design the data path for the IP camera feed.

Outcomes of the project: Successfully created the client-server architecture and also created a webservice to authenticate playback of the stream (live or archived). Also successfully setup wowza streaming engine as video broker for the IP camera feed.

Major Learning Outcomes: Got an insight into media streaming protocols, Linux Scripting, Python Scripting, http communication, Nodejs, open source frameworks like ffmpeg and gstreamer.

Brief Description of working environment, expectations from the company: Work environment is very good. All the interns were seated together so that there can be healthy communication between all of them and they can all help each other if need be. You are directly involved in the project. Since its a new project and the team is just exploring softwares and technology to use in the project, the company would expect you to be comfortable in using several different softwares and provide inputs if it is useful in the project. The company also expects you to complete the tasks allocated to you and provide monthly reports and demos of the work done.

Name: VANDITA KAMATH (2012B2A3756P)

Student Write-up

Short Summary of work done during PS-II: Interning at RBCCPS was a unique and an enriching experience. Being a part of the core team for the Smart City Project gave me an opportunity to learn about the latest technology and research in the Internet of Things domain. The two major deliverables during my PS2 were 1) Setting up a VPN network to ensure secure data transfer. This required the understanding of tunneling protocols and setting up an OpenVPN network. 2) Playback security for Wowza Streaming Engine. Wowza Streaming Engine is the video management software that is being tested for the playback of live and video on demand streams from IP cameras. Experiments were carried out setup a secure playback architecture for incoming and outgoing streams.

Tools used (Development tools - H/w, S/w): Wowza Streaming Engine, OpenVPN.

Objectives of the project: To determine the architecture for camera feed (live/VOD) to client application.

Outcomes of the project: Successfully carried out experiments and set up an end-to-end framework for secure transfer of IP Camera video streams.

Major Learning Outcomes: OpenVPN and Wowza Streaming.

Brief Description of working environment, expectations from the company: 1) Work involves software installation, integration and testing (mainly ECE/ Computer Networks based) 2) Flexible work hours and load 3) Post PS you might have the opportunity to continue as a Project Assistant at the lab in IISc, Bangalore 4) The projects are usually individual. Small team size, but you will majorly interact only with your mentor and a few fellow interns (during the summer mostly) 5) Perfect addition to your profile if you plan to apply for an MS (might even get a good recommendations from some very established Profs).

PS-II Station: Sokrati Technologies Pvt. Ltd, Pune

Student

Name: SRIJAN SHARMA (2012B2A8591G)

Student Write-up

Short Summary of work done during PS-II: I worked as a Business Analyst intern in Sofie Team (Sokrati for E-commerce). The work involved creating, launching & monitoring online advertising campaigns across multiple channels (Google, Facebook, Ebay, Youtube, Twitter etc.)

Tools used (Development tools - H/w, S/w): Google Adwords (Online & offline platforms), Business Facebook, doubleClick for Publishers, Bing AdEdito, Microsoft Excel.

Objectives of the project: Developing Online Marketing Strategies for E-Commerce Clients.

Outcomes of the project: Got the opportunity to design the marketing strategies and growing the brand of small businesses online.

Major Learning Outcomes: A thorough understanding of Google Adwords and Business Facebook, Basics of Digital Marketing and Advertising.

Brief Description of working environment, expectations from the company: The work environment is friendly and the work culture is akin to most IT startups. The quality of the work is appreciated and learning opportunities are plenty.

PS-II Station: ST Microelectronics (I) Pvt Ltd., Greater Noida

Mentor

Name: Radhika gupta

Designation: The student has done a very good work. Interns of overall shown the qualities of good intern. They have met the almost all the deadlines. The mentor was very specific and very happy to have a student with all the qualities of a good intern like Initiative looking for initiative, the eagerness to learn and have a positive frame of find with the hunger to dwell in the reasoning part of all the activities. They even had a professional skill and a good communication skill.To state the obvious, students work hard.Their adaptability have to be applauded. The student joins as interns are provided almost two months training prior to putting them on specific projects and this caters to all the requirements that the student may be lacking before starting a work. The students are required to have basic knowledge of analog and digital circuits. This two courses cover all the aspects of our recent development requirement. Prior knowledge of VLSI makes the student highly comfortable on the work.

Faculty

Name: R K Tiwary

Comments: St Microelectronics is a a semiconductor company renamed in 1998 which was created as SGS Thompson in June 1987.ST addresses the rise of the smart home and smart city systems through their core: energy consumption and management systems, or the future smart grids and their applications.To keep its technology edge, ST has maintained an unwavering commitment to R&D from the beginning with approximately 7,500 people working in R&D and product design and spent about 19% of its revenue in R&D in 2016 . The details about the company can be accessed form the site st.com.What I learnt from the mentor was the students required the basic knowledge in the field of analog and digital electronics and some software language. Our students are deployed mostly in the R&D department of St Microelctronics. What I suggest to students to be prepared with the VLSI tools and VLSI circuits before joining ST as PS-II students. The most important thing that the company requires from the student is to continue as an employee after the completion of the PS-II course. Besides this they have a clear focus on particular study addressing topic of interest within our overall research program: scope, hypothesis, technical approach including data collection and analyses planned. Successful interns understand the value of applied experience and how in enriches the academic experience.

Student

Name: ANURAGPALLAPROLU (2012B5A3405P)

Student Write-up

Short Summary of work done during PS-II: Worked on delay insensitive and quasi-delay insensitive asynchronous logic fabrics. Ported traditional CMOS standard gates into pure asynchronous modules. Wrote Verilog macros to extend SystemVerilog support to IEEE specification. MSI modules designed with the C element as the atom. Studied the Communicating Hardware Processes (CHP) design specification for high level description of the device to be designed. Worked on the Wake-Up flop concept, again designed using purely QDI fabric. Ported standard data structures like stack, FIFO, Arbitration, et cetera into circuit models. Worked on concepts for asynchronous memories and "wrap-around" control interfaces for the SRAM core. Presented a poster titled "Building Smarter Circuits using Asynchronous Logic" at TechWeek 2017 organized by the company.

Tools used (Development tools - H/w, S/w): Cadence Virtuoso, Haskell, Verilog, Logic Friday, ESPRESSO, MIS II, LTSpice, LaTeX.

Objectives of the project: Asynchronous Logic Design.

Outcomes of the project: Wake-Up Flop, Pausable Clock Synchronizer, Posedge Recovery Synchronizer.

Major Learning Outcomes: I never knew about the C element or the asynchronous logic side of electronic design until I got here. This is not mentioned in any undergraduate textbook. Also I am very well versed with functional testing in Cadence Virtuoso now.

Details of papers/patents: "Floating Point Arithmetic Units - A Metamathematical Approach" - A. Pallaprolu and R. Srinivas, Submitted to IEEE Transactions on Circuits and Systems I on the 27th of May, still under process.

Brief Description of working environment, expectations from the company: Extremely nice place to work on one's own ideas. The atmosphere fosters self study and research. I was given an interesting project as such, and it was a bonus that the field was nascent. The people are very friendly and keep making conversation so the whole work place feels very comfortable as such. The transportation service

was impeccable and there was not a single day the bus system was delayed. The campus is situated in an isolated plot in Greater Noida and thus is generally very peaceful.

Name: PARAKH Sarda (2013A3PS176P)

Student Write-up

Short Summary of work done during PS-II: Determination of Access Time Characterization of Memory.

Tools used (Development tools - H/w, S/w): Viruoso, Eldo, Unix and shell scripting.

Objectives of the project: Determination of Access Time Characterization of Memory.

Outcomes of the project: Determination of Access Time Characterization of Memory.

Major Learning Outcomes: Learnt the basics tools used and the internal work flow in development and testing of ASICs.

Brief Description of working environment, expectations from the company: Working environment is excellent with all the facilities that anyone can ask for. The projects given are very much related to the core electronics so the students have a wide range of topics to choose from for their projects.

PS-II Station: Texas Instruments (I) Pvt. Ltd. - RF Micro Electronics, Bangalore

Faculty

Name: Satya Sudhakar Yedlapalli

Comments: The industry, apart from the technical proficiency and the learning ability looks for better presentation skills (in terms of PPT's etc). And this is one area where students can be better prepared for before they come for PS2. Analog IC design, Tuning & Testing.

Student

Name: LAVINA CHANDWANI (2012B2A3626G)

Student Write-up

Short Summary of work done during PS-II: System Verilog modelling.

Tools used (Development tools - H/w, S/w): System Verilog.

Objectives of the project: Create models of all analog components in a product for top level simulations.

Outcomes of the project: Reduce simulation time.

Major Learning Outcomes: Verilog.

Brief Description of working environment, expectations from the company: Good and motivating.

Name: VARKEY M JOHN (2012B3A3467G)

Student Write-up

Short Summary of work done during PS-II: I was involved in modeling of circuits in SystemVerilog to reduce the overall simulation time. Different blocks in a multi-phase buck converter voltage regulator module like SAR ADC, GPIO, etc. were modelled. The blocks modelled in SystemVerilog were tested in Cadence Virtuoso for different inputs. The digital simulator made using the SystemVerilog blocks are used for debugging the circuit with different test cases, which will be much faster than the analog simulator, allowing more cases to be tested before chip manufacture.

Tools used (Development tools - H/w, S/w): SystemVerilog, Cadence Virtuoso.

Objectives of the project: To model functional blocks of a circuit in SystemVerilog so as to reduce overall simulation time.

Outcomes of the project: Many blocks were digitally modelled and the simulation time for buck converter control loop reduced to 30 seconds from 12 hours.

Major Learning Outcomes: Learned SystemVerilog, got an overall view of the voltage regulator module blocks.

Brief Description of working environment, expectations from the company: The company work environment is awesome. They provide you a cubicle, free wifi and free coffee, tea, etc. They also have a building dedicated for sports for all the sports enthusiasts. The team I work with is also very helpful and supportive of my work. Interns are allowed to think and come up with their own ideas to implement in their respective projects, which makes it interesting and a lot to learn from.

Name: PINAKINPADALIA (2013A3PS600P)

Student Write-up

Short Summary of work done during PS-II: My project work at TI included developing the firmware for USB type C/PD controller (TPS 65983B) for firmware test automation. The hardware for implementing the same is a monitor device which connects to 2 USB Type C devices using standard USB Type C connectors. The monitor also contains the USB Type C/PD controller and TM4C123G microcontroller (ARM Cortex-M processor) to implement functionalities for FW test automation.These functions include - Making the TPS65983B controller as power source/sink. Configuring registers. Reading ADC channels. Sniffing of PD packets. Connecting and disconnecting the devices. Flipping CC lines etc. The TM4c123G controller acts as the I2C master and directs the TPS65983B controller for implementing its functions. Direct functions such as the control of MUXs to connect and disconnect devices, flip CC lines etc., are handled by TM4C123G controller directly. Moreover, it is also responsible for interfacing with the pc host and receiving commands for test automation.

Tools used (Development tools - H/w, S/w): The firmware is developed for USB Type C/PD controller and TM4C123G microcontroller on the monitor device using C language on Kiel µvision Integrated

Development Environment (IDE) for the firmware on USB Type C/PD and TM4C123G controllers and Python on pc side.

Objectives of the project: To develop the firmware for USB Type C/ PD controller to aid in firmware test automation.

Outcomes of the project: The code has been developed and is currently in process of being integrated in the test framework used to perform automated tests on Type C devices. Moreover, the added functionality of PD sniffing will help the hardware, capture the PD communication packets transferred between Type C devices during the test runs.

Major Learning Outcomes: Experience in C as well as python as coding languages and Kiel as an IDE. The project gave me an exposure to the new USB Type C/PD standards and protocols.

Brief Description of working environment, expectations from the company: Texas Instruments is a brilliant company for anyone who is flexible to take up the challenges across various domains of electronics that it throws in terms of projects. Brilliant learning experience, provided one is proactive. But the best of all are its people, some of them highly accomplished and all of them very humble. Of course, texins, a sports complex, is a major attraction. One can play badminton, basketball, tennis, TT, snooker etc. There is a nice gym and a separate yoga and mediation room for health freaks. On the whole, it's a nice place to get some experience.

Name: VAIBHAV GARG (2013A3PS587P)

Student Write-up

Short Summary of work done during PS-II: I interned in Analog Design Automation Team. I worked on the development and verification of software tools used to ensure the protection of ICs against electrostatic damage. I worked on two different tools. In one tool, I worked on Quality Checks to ensure there is no fault in the working of the tool. In the other tool, my main work was to enhance the existing features. It was my first exposure to the software side of electronic system design and hence I got to learn a lot of new things. I used languages including PERL and SKILL.

Tools used (Development tools - H/w, S/w): UNIX, PERL, SKILL.

Objectives of the project: The objective was to ensure the reliability of the tool by carrying out quality checks and also enhance the features to make things easier for the design community.

Outcomes of the project: My work ensured that the tool is full-proof. It will be of great help to the design community.

Major Learning Outcomes: I learnt about ESD, the threat it causes to ICs and the major work was around how to automate the design.

Brief Description of working environment, expectations from the company: The work environment is very good. There is no in and out time. The people here are very helpful and always ready for discussion.

Name: MANISH Kumar (2012B2A8747P)

Student Write-up

Short Summary of work done during PS-II: Designed a system to measure 1uS settling time with 20 bits accuracy.

Tools used (Development tools - H/w, S/w): Altium, Xilinx, Tina, labview.

Objectives of the project: Design a system to measure 20 bit DAC settling time.

Outcomes of the project: Achieved the objective of the project.

Major Learning Outcomes: Analog signal chain design, digital architecture development.

Brief Description of working environment, expectations from the company: Working environment is great. You can come and leave any time. There is sports complex to chill.

Name: SUDEEP MISHRA (2013A3PS626G)

Student Write-up

Short Summary of work done during PS-II: Studied phase locked loops and frequency synthesizers. Completed the schematic and layout of a low noise, compact, USB modular and high frequency signal generator. The potential applications of the signal generator include test and measurement systems, RADAR and as a portable local oscillator. The system can be easily programmed using USB 2.0 as it has an on-board USB to SPI/I2C bridge.

Tools used (Development tools - H/w, S/w): Altium Designer.

Objectives of the project: To develop a very low noise signal generator using TI solutions in order to match the performance of YIG oscillator.

Outcomes of the project: The schematic and layout of the system were successfully developed. The system was given a form factor of a USB thumb drive.

Major Learning Outcomes: Learned about phase locked loops- their building blocks and noise analysis. Also got to know the layout challenges of a high frequency board.

Brief Description of working environment, expectations from the company: Work environment of the company is very good with flexible timings. The team members are very supportive and provide all the help needed. There is a lot of team interaction as well. Also, lab is equipped with all the components and facilities required.

Name: NITESHGOYAL (2015H123161P)

Student Write-up

Short Summary of work done during PS-II: Design of Low Voltage Differential Signaling transmitter in 65nm CMOS technology.Design was focused on setting critical parameters like differential voltage, driver current, common mode voltage for 125 Mb/s per pin .One to one mode of transmission was used for this design.Electrical specifications need to confirm to TIA/EIA-644 standards.

Tools used (Development tools - H/w, S/w): Cadence virtuoso.

Objectives of the project: Design of LVDS Transmitter for 125Mbps in 65 nm CMOS technology.

Outcomes of the project: Specifications meet with those of TIA/EIA- 644 Standards.

Major Learning Outcomes: Selection of proper architecture, and how to set critical parameters without disturbing other parameters.

Brief Description of working environment, expectations from the company: Great cutting edge technologies to work with.Smart, intelligent, helful people around you.Inspiring managers.

Name: D M S GAUTHAM (2013AAPS022H)

Student Write-up

Short Summary of work done during PS-II: Designed an Analog Signal Chain for Image Sensor.The signal chain consisted of Operational Amplifers, Fully Differential Amplifiers and an anti-aliasing filter driving an ADC. A high PSRR regulator was used in the power supply to ensure that the power had low noise.

Tools used (Development tools - H/w, S/w): Altium Designer, Code Composer Studio.

Objectives of the project: Design Fast and Low Cost / Low Power Analog Front End.

Outcomes of the project: An Analog Signal Chain with 73dB SNR and high THD was designed and tested.

Major Learning Outcomes: Learnt how circuit designing is done in general and how the components to be used in the circuit are chosen. Further, i also learnt about PCB designing, routing and layout.

Brief Description of working environment, expectations from the company: The working environment at Texas Instruments is great with the mentor's being extremely helpful, on par with our faculty in general. Further, discussions and knowledge sharing sessions are conducted so that you can get acquainted with the work done by other teams. TI has a sports facility called TEXINS (Which has almost all the sports) where you can relax for sometime during the work hours itself. Best part about TI is flexible working hours. The food in canteen is not very great but not bad too.

Name: VRUSHIK CHIMANLAL AMRUTIYA (2013A3PS341G)

Student Write-up

Short Summary of work done during PS-II: Digital safety monitoring.

Tools used (Development tools - H/w, S/w): C language, CCS, Radar Studio, and Cadence.

Objectives of the project: Verification of digital safety monitoring in autoradar.

Outcomes of the project: Successful operation of device.

Major Learning Outcomes: Running simulation on cadence, little bit about RTL.

Brief Description of working environment, expectations from the company: logically sound, basic knowledge of atleast C language, Eagerness to learn and explore.

Name: PHADKE SHREEPRASAD SUDHIR (2012B4A3715G)

Student Write-up

Short Summary of work done during PS-II: Write a verilog code for a SPI master module. Also carry out the digital verification of that module.

Tools used (Development tools - H/w, S/w): Cadence Simvision.

Objectives of the project: Design a reconfigurable SPI-Master module.

Outcomes of the project: Successfully completed the project.

Major Learning Outcomes: RTL coding guidelines, Digital verification.

Brief Description of working environment, expectations from the company: Work culture is good. Employees are friendly and helpful.

Name: SAI SRUJANA VUPPALA (2013AAPS135H)

Student Write-up

Short Summary of work done during PS-II: Design of low pass filters based on discrete optimization algorithms like differential evolution, steepest descent and multidirectional search algorithms. Creating moels of DC/DC power converter ICs with control loop and internal compensation circuit in SIMPLIS.

Tools used (Development tools - H/w, S/w): Matlab, SIMPLIS, PSPICE.

Objectives of the project: To reduce the error and optimization time in filter design. To design very accurate models of power converter ICs in SIMPLIS.

Outcomes of the project: Using hybrid algorithms in discrete domain can result in more accurate results in less time.

Major Learning Outcomes: I learnt the applications of discrete optimization algorithms and their limitations. Also learnt about various types of power converters. Understood the importance of design time.

Brief Description of working environment, expectations from the company: The team I worked with is very friendly. Everyone at TI is very enthusiastic about helping the interns and they encourage free thought. TI expects every intern to have 'ready to learn' attitude. TI fosters collaboration and teamwork.

Name: CHIRAG AGGARWAL (2015H123163P)

Student Write-up

Short Summary of work done during PS-II: The project started by writing a .tcl script (ALTOS API support in .tcl) for reading the liberty timing file. After this a Perl script was written for multiple .tcl runs to get data (used as input to the simulation decks) in a Hash structure format. Then for five digital cells for various parameters (delay, power etc.) generic (independent of liberty timing file) decks were written using SPICE & SPECTRE syntax. Then a final script was written that takes inputs from the hash obtained and run these decks on spectre simulator to get the data back in .lib format. Then the results obtained

were compared against the ones obtained from Liberate tool from Cadence (This tool directly generates liberty timing files).

Tools used (Development tools - H/w, S/w): Spectre Simulator, Virtuoso Liberate Characterization Solution.

Objectives of the project: To verify the data (delay, internal power, hidden power, input cap , leakage) for five digital cells (inv , nand2 , nor2 , full adder & D-flip flop) present in the Liberty Timing files.

Outcomes of the project: The data obtained so far matches with existing .lib data with error percentage < 1%.

Major Learning Outcomes: Proficient in PERL Scripting, .tcl Scripting, Spice & Spectre. Also thorough understanding of Liberty Timing files (An important industry standard file format used for Physical Design/Back End Process of VLSI like Synthesis, Floorplanning, P&R etc.)

Brief Description of working environment, expectations from the company: This internship opportunity has helped to interact with people, the way to approach problems, to manage shared resources, to work in a team, to listen and to express one's ideas while working in a team. Everyone in the team was very helpful and approachable in clarifying the technical queries. Overall the environment was such that it has helped me enhance technical and interpersonal skills on a corporate wave front. And yes not to forget the entertainment part @ Texins.

Domain: Computer Science

PS-II Station: Aditya Birla Corporate IT , Mumbai

Student

Name: Abhay Nair (2015H149237P)

Student Write-up

Short Summary of work done during PS-II: Worked on different projects in the field of technology consulting.

Objectives of the project: To plan, strategize and implement (and run adoption campaigns if necessary) provide ABG with the edge by use of technology. In short to transform ABG from a pen and paper.

Outcomes of the project: Integration of new technology, establishing new work flows etc.

Major Learning Outcomes: How consulting projects in an inhouse consulting group works.

Brief Description of working environment, expectations from the company: True corporate with a lot of politics at times, not inclusive of everyone though. Can not help notice that BITS students despite BITS being a part of ABG, are often overlooked. And little or no effort is taken into structuring the program.

PS-II Station: Adobe Systems, Noida

Faculty

Name: Ritu Arora

Comments: Excellent station for CS students. Students are made to work on Adobe products, either developing new features for an existing product or improving the efficiency of existing features. Challenging and learner-oriented work with excellent guidance.

Student

Name: Shubham Singh (2012B3A7466P)

Student Write-up

Short Summary of work done during PS-II: Practice School II at Adobe Systems Noida has been a steep learning curve for me. I worked with Photoshop Express team under the guidance of Mr. Surendra Sachdeva. I worked on two sub-projects: Creative Edits and Creative Capture effects. Briefly put, Creative edits team works on post capture artistic effects and Creative Capture on live and post selfie effects. My work taught me the use of Model View Controller pattern and other important design patterns. I was introduced to the huge codebase of Photoshop Express which improved my debugging skills and my style of programming. Since the codebase is very large , one has to think of all the test cases possible and write bug free code as slight change in code can affect large part of dependent codes. Also while writing the code, importance is given to understanding the code and then making the changes. The codebase is mostly in C++ and Objective-C and one has to develop good knowledge of these languages to modify the codebases. I was treated as full time employee and given the responsibility of the feature which pushes oneself to learn more and match the expectations. The features which were assigned to me were on iOS platform, so one has to learn the framework for iOS Development. Also I have to collaborate with many Adobe researchers which was very informative and helped me learn new technologies.

Objectives of the project: Create new effects for Photoshop Express App.

Outcomes of the project: Created many live and post capture effects for the app.

Major Learning Outcomes: Developed deep knowledge of C++, Objective-C languages, Core Image library and frameworks of iOS development.

Brief Description of working environment, expectations from the company: The environment at Adobe is very good and one can learn from lot of experienced people in this field. Mentors are very helpful and supportive and discussing things with them gives idea of solving challenging problems. I enjoyed the Adobe Systems as a PS2 and there are many facilities available in the campus. One can avail these facilities free of cost and also Adobe has flexible timings. There are many events organized in the campus to strengthen the bonding among team-mates. This five months stay at Adobe has changed the

way I approach a problem and finally get to the solution. I am grateful to Practice School Division for giving this wonderful opportunity and develop my personal, social and intellectual skills.

Name: Jaiwant Rawat (2012B4A7714P)

Student Write-up

Short Summary of work done during PS-II: Worked on one of adobe's ios app. Work was basically to implement various features in the app workflow so to increase the user base of the workflow from thousands to millions.

Tools used (Development tools - H/w, S/w): Xcode, Objective C.

Objectives of the project: To increase the number of users of app.

Outcomes of the project: Features were incorporated in the app there was improvement in the numbers.

Major Learning Outcomes: ios App development.

Brief Description of working environment, expectations from the company: Working environment is good. Company expects that you implement the features so that they can used by millions of people.

PS-II Station: Altisource Business Solutions, Bangalore

Faculty

Name: Raja vadhana P

Comments: Industries expect students to be adaptive, proactive, quick learners and a professional in deliverable. With respect to technical skills clear understanding and expertise in common technologies like JAVA, J2EE, Database, HTML, few Scripting languages are expected of interns.

Student

Name: Rahul Ambavat (2013A7PS011G)

Student Write-up

Short Summary of work done during PS-II: Worked on the android app of the company. Fixed few bugs in the application and also built a couple of POC's for their future use.

Tools used (Development tools - H/w, S/w): Android Studio.

Objectives of the project: Confidential.

Outcomes of the project: Confidential.

Major Learning Outcomes: Android app development.

Brief Description of working environment, expectations from the company: Laptops provided are not good enough for development purposes. Office culture is not at par with other tech companies. Work pressure is a lot.

PS-II Station: Amazon Development Center, Bangalore

Student

Name: Farha Naaz (2015H112177P)

Student Write-up

Short Summary of work done during PS-II: I have developed a sandbox testing tool for all developers at amazon.

Tools used (Development tools - H/w, S/w): Amazon internal tools, java8.

Objectives of the project: Develop a utility to ease life of developers in context of testing their services.

Outcomes of the project: Highly resilient testing tool.

Major Learning Outcomes: Learnt new technology, learnt how internally services work.

Brief Description of working environment, expectations from the company: Best thing about amazon is that they dont force you to work, they just assign you work in the form of task, then you take ownership of the task to be completed. Everyone is very helping here. You can reach out to anyone in your team ask even silly doubt and sometimes you can even have high level discussion with your teammates. It is amazing experience to work here. But some things depend on your luck too. If have a good mentor assigned then life will be easy, but in case you dont have a good mentor, you are gonna have hard time.Just Work hard, have fun & make history.

Name: Ayush Kataria (2013A7PS028P)

Student Write-up

Short Summary of work done during PS-II: I worked as a part of the India Payments Issuance team. During my tenure as an intern I worked on various projects all of which were directly relevant to the ongoing product that our team was working on, the Amazon Pay wallet. My most significant project was building a view layer service which would support APIs for providing the transaction history data of

Amazon Pay wallet and Amazon Gift Card wallet to various clients. I specifically worked on the API that would support the views for the retail website and the customer support executives. Some of my other projects were building an API that calls the registration service of the Amazon Pay wallet for a very specific use case. Designing email templates for the C2D use case of Amazon Pay wallet. Introducing the C2D use case in the existing add money flow so that it can be accessed by transaction history and accounting. Add money flow: A series of steps that ultimately lead to adding money in your wallet. C2D use case: think of it as a special case that allows you to add money to the wallet. (Cannot describe in detail due to confidentiality issues).

Tools used (Development tools - H/w, S/w): Java, Elasticsearch, Mason, HTML, JavaScript.

Objectives of the project: To deliver a new service that supports all use cases of providing transaction history data to various clients, along with the API implementation for the retail website and the customer support executive use case.

Outcomes of the project: Delivered.

Major Learning Outcomes: It taught me a lot about scalable design and issues that you face when trying to implement an architecture while estimating the needs of the present as well as the future and trying to balance it with stringent deadlines.

Brief Description of working environment, expectations from the company: Most of the work would be in java but you may have to work on the front end at times. The company values work a lot so you get a lot of work and can always ask for more but that does not mean it is an all work and no play place, the team members are usually young thus you get to have a lot of fun as well.

Name: Sreehari S (2013A7PS126G)

Student Write-up

Short Summary of work done during PS-II: During the course of my internship with the MARS (SSPA Automation) Team in Bangalore, I got to work on a wide range of tasks, involving and requiring both technical and non-technical skillsets.

All my contributions during the internship were centred around the team's 2017 goal, i.e., to deliver an automation framework to reduce human judgement effort in moderating content, and to improve moderation productivity by 30%. The MARS tech team is building services that will enable auto-moderation of content, with a current focus on advertisement-creative content. The team will also be building services around duplicate campaign detection, advertiser/campaign risk assessment and text understanding, which will act together and serve in improving productivity of content moderation.

Over the previous few months, I contributed majorly towards the development of an Annotation Pipeline, which is the most important component of the service being built by our team. I worked on the annotation pipelines and core logic to automatically spot various errors and annotate the input content with the findings. I also carried out exploratory analysis required for the some of the annotators, during the initial phase of my internship. And, towards the latter half, I drove the initial phase of an upcoming service, by carrying out an analysis on internal ad-campaigns data, which laid the foundation for a massive potential increase in productivity, by allowing for auto-moderation of duplicate content.

Tools used (Development tools - H/w, S/w): Language - Java.

Major Framework(s) - Apache UIMA, spring and internal tools. Some good skills to have apart from CS fundamentals - GIT (version control) and spring.

Objectives of the project: Development of an annotation pipeline to enable auto moderation of content

Outcomes of the project: The annotation pipeline and the service were launched successfully and are in production.

Major Learning Outcomes: Writing modularized production level code, learning to work with new frameworks and to build production-level components using the same, efficient communication strategies across teams and documentation.

Brief Description of working environment, expectations from the company: At Amazon, SDE interns are treated like SDE-I employees and are allotted work similar to what an SDE-I is expected to deliver. This ensures that interns get to work on good projects that are valuable from a business point of view. Interns get to do everything an SDE-I does and at times more, including attending stand-up meetings, team tech talks and discussions, meetings with senior members, depending on the type of project and work involved. I got to work on some important components during my internship and my overall experience was really good, as there's a lot to learn that you do not get to learn at college.

Name: Zubair Amin (2015H103097P)

Student Write-up

Short Summary of work done during PS-II: Created a new service for Amazon Now for sending emails and SMS to the seller for each order rejected by a customer during delivery.

Tools used (Development tools - H/w, S/w): Java, Spring Beans, MVC, Dynamo DB, SQS, SNS, Mockito, Power mock.

Objectives of the project: To provide more visibility into the rejects made by a customer so that there is reduction of the gap between amount clawed back from seller's account and the amount of reconciled reject inventory.

Outcomes of the project: Emails and SMS sent for each Order rejected and reduction of the gap mentioned above.

Major Learning Outcomes: Java, Spring, Dynamo DB, SQS, SNS, Mockito, Power mock, Learning best coding practices, Industry standard coding practices.

Brief Description of working environment, expectations from the company: It was a nice learning curve they let you own the project which you are working on which is a very nice thing to do. Work pressure is comparatively on the higher side.

Name: Kota Anantha Bhagyanath (2015H103077P)

Student Write-up

Short Summary of work done during PS-II: Internal tool to automate on boarding of clients on to team platform. Process include merging their code into teams code, testing and deploying without the intervention of team developers.

Tools used (Development tools - H/w, S/w): AWS services (SQS, SNS), Internal tools.

Objectives of the project: Queue management of incoming deployment requests.

Outcomes of the project: Design and implementation complete.

Major Learning Outcomes: Knowledge of AWS services like lambda functions, SQS, SNS and their role in design decisions. Design choices to take up particular approach.

Brief Description of working environment, expectations from the company: Team expects you to be a constructive member in all design discussions and work to be delivered and presented to the team. Sprint planning tells everyone the progress of each task taken by a person. Any design choices to be discussed with teams by providing alternatives and discussing the pros and cons of each approach and arriving at a most feasible solution. Company expects you to reach out to the teams to clear any hurdles. On time delivery on work. Getting all the code reviews before we leave the company.

Name: Simran Kapur (2013A7PS152H)

Student Write-up

Short Summary of work done during PS-II: Worked on launching new push programs in markets of Europe and North America. Also worked on writing a new package to fetch different types of deals data, transform it and publish to certain places. Also worked on a type of migration from older platform to revised platforms.

Tools used (Development tools - H/w, S/w): Amazon Web Services (AWS) like EMR, SWF, S3, G2S2 . IDEs like Eclipse, IntelliJ. Languages like Java, Java Spring, Hive, Python, handlebars.

Objectives of the project:

1) Worked on launching new push programs in markets of Europe and North America.

2) Worked on writing a new package to fetch different types of deals data, transform it and publish to certain places.

3) Worked on a type of migration from older platform to revised platforms.

Outcomes of the project:

1) Launched two push programs worldwide.

2) Package written and pushed to production stage.

3) Migrated successfully.

Major Learning Outcomes:

1) Functioning of huge companies.

2) AWS services.

3) Team work and collaboration.

4) Handling high pressure situations.

Brief Description of working environment, expectations from the company: The work timings at Amazon are not fixed, you don't have to clock in certain hours, you may even choose to work from home if required. However what matters is your delivery. As long as you're completing your work on time, that's enough. My manager and mentor were very supportive and helpful throughout. I would say that it's a great environment to work in.

Name: Ashutosh Bhatt (2012B3A7792P)

Student Write-up

Short Summary of work done during PS-II: I joined my internship at Amazon Bangalore on 16th January and was a part of the App Engagement team. I worked on developing a Metadata console for handling data associated with a particular team platform.This project helped me immensely by developing my core skills and knowledge.I also got a great opportunity to develop a web application from scratch which interacted with other platforms.

Tools used (Development tools - H/w, S/w): HTML, CSS, Javascript, Spring MVC framework, Java, Twitter Bootstrap, tomcat Server.

Objectives of the project: Developing a Metadata console for handling data associated with a particular team platform.

Outcomes of the project: Developed a Metadata console for handling data associated with a particular campaign and providing various operations to handle that data.

Major Learning Outcomes: The core concepts involved in the process were HTML, CSS, Javascript, Spring MVC framework, and Java. Additionally, I was required to get acquainted with Amazon Internal tools and processes. I also got first hand experience for designing the flow for a web application.Discussing design ideas with my peers shown me that one needs to have sound theoretical knowledge to provide a great design. Additionally, as an amazonian, I constantly attempted to use the 14 Leadership Principles as an integral criteria for making decisions.Working with many stakeholders was an important part of my project and I definitely gained some insight to do it in a better way. Additionally, I also got acquainted with agile software development methodologies like Scrum and Kanban and working with a cross-functional team. I have learned that Bias for Action is an important characteristic to be a good programmer.

Brief Description of working environment, expectations from the company: The working environment is highly dynamic. One needs to interact with a large number of stakeholders to ensure that all of them are kept at the same page. There are no fixed timings and one is just expected to complete one's work. The peers are friendly and offer guidance whenever approached.However, there are changes in product

specifications quite frequently and it leads to a lot of wastage of time which could have been easily avoided if things were envisioned clearly before.

Name: Ayushi Agrawal (2015H112167P)

Student Write-up

Short Summary of work done during PS-II: My project includes implementation of 8 APIs for Amazon Pay (onboarding non amazon merchants).These are implemented in C# for merchants who have their servers on .net. Apart from this I have work on front end and back end changes for UI website for LPA-IN.

Tools used (Development tools - H/w, S/w): Visual Studio, C#, Ruby on rails,java,amazon internal tools.

Objectives of the project: *Would enable the merchant to have a browser integration with the PSP UI. i.e. if the merchant wants to invoke the PwA India payment flow from their mobile or desktop website.

*The server side SDK would provide a new method called – 'GetProcessPaymentUrl (merchantId, merchantPayload (encrypted probably or same payload as SignAndEncrypt method), callbackUrl/returnToUrl)'.

*The merchant web app (mobile or desktop) can redirect to the url provided as a response of the above method to conduct payments. The PSP server would detect the need to authentication based on cookie presence, conduct the required operations and return the control back to merchant app by redirecting the browser with PSP response on the callback url as parameters.

Outcomes of the project: 8 working api's used by many merchants, UI changes on wesite (implementing sign out feature).

Major Learning Outcomes: C#.net, Ruby on Rails.

Brief Description of working environment, expectations from the company: Working environment is very good.Working hours are very flexible.Company expects you to work sincerely and follow proper

process in completing any task.Designing is also focused alot as many time we need to use other team's services.

Name: Jayati Aggarwal (2013A7PS165P)

Student Write-up

Short Summary of work done during PS-II: Integrated payments.amazon.co.uk and payments.amazon.de websites.

Tools used (Development tools - H/w, S/w): Dynamo db java and ruby on rails.

Objectives of the project: Integrated payments.amazon.co.uk and payments.amazon.de websites.

Outcomes of the project: Integrated payments.amazon.co.uk and payments.amazon.de websites.

Major Learning Outcomes: Dynamo db git and testing.

Brief Description of working environment, expectations from the company: Good working environment and good learning.

Name: Sumit Bhatia (2013A7PS031G)

Student Write-up

Short Summary of work done during PS-II: The work was majorly to create a web application whose main purpose is to provide the main users of the projects such as the finance team, managers of all the teams a tool which could provide them a summary and a detail about people present in their hierarchy to make hiring and allocation to projects related decisions.

Objectives of the project: The objective of the project was to provide the main users of the projects such as the finance team, managers of all the teams a tool which could provide them a summary and a detail about people present in their hierarchy to make hiring and allocation to projects related decisions.

Outcomes of the project: The expected outcome of the project was to provide insightful reports about the headcount present in various stages.

Major Learning Outcomes: The key learnings from the project were: MVC architecture, web technologies, Version control system. Some of the other learning such as reading and understanding a documentation as direct examples would not always be available.

Brief Description of working environment, expectations from the company: The working environment in the PS station is very team specific and varies drastically from team to team.

Name: Hemanshu Sethi (2012B4A7420G)

Student Write-up

Short Summary of work done during PS-II: I have successfully completed one called destination based packaging and flash gst transshipments, which I successfully completed in my 5 month tenure at Amazon and during the project I learnt a lot in the areas like AMAZON WEB SERVICES like SNS, SQS, DYNAMO-DB, CORAL SERVCES, AMAZON INTERNAL TOOLS and how the entire software building process.

Tools used (Development tools - H/w, S/w): Amazon web services like sns, sqs, dynamo-db, coral servces, amazon internal tools.

Objectives of the project: The Destination-Based Packaging project aims to reduce the cost of shipping across India. Transitioning to polybags for all AFT shipments across the market provides a National-level transportation and packaging entitlement of $16.7M, using 2015 volume. With Destination-Based Packaging, we would be able to enter a kilometer value into a field and have all shipments traveling from origin FC to customer within that defined kilometer radius be recommended into polybags (exclusions will be through SWAN rules). This solution will initially target up to the Regional-level, accounting for $6M of the $16.7M AFT entitlement.

Outcomes of the project: Since EFP is a growing part the India marketplace, leadership teams in India would like to capture the savings through EFP sites as well. To replicate the same solution for EFP sites in India, customer's zip code and fragile attribute would be the key elements to recommend Polybag to a potential Polybag'able order/shipment.

Major Learning Outcomes: In terms of learning, the experience has been nothing short of terrific. The time spent at PS-2 has been a great teacher in various spheres, including but not limited to understanding corporate life, expert guidance, apprehending new technologies and their developments and building a professional character.I learnt a lot in the areas like AMAZON WEB SERVICES like SNS, SQS, DYNAMO-DB, CORAL SERVCES, AMAZON INTERNAL TOOLS and how the entire software building process.

Brief Description of working environment, expectations from the company: Working environment at Amazon is quiet hectic. One would not get free time while working here, you will always be involved in some work or the other. Learning and industrial experience gaining is very well at Amazon. Company doesn't treat you as an intern, they treat you as a full time employee and expects work to be done according to that. Employees here are quiet helpful.

Name: Sukriti Tiwari (2013A7PS086G)

Student Write-up

Short Summary of work done during PS-II: Was a part of the Amazon Fulfillment Technology team (AFT), particularly AFT-Fresh, which deals with Amazon Fresh.Amazon Fresh is a subsidiary of the Amazon.com. It is a grocery delivery service which is not yet released in India. As part of my internship, my first couple of weeks were bug fixes to get a hang of the code base. Following that, I worked on feature requests in existing portals for the next month. After these tasks were complete, I started work on a project that was starting in the team, and got ownership for the same.

Tools used (Development tools - H/w, S/w): Majorly worked with AngularJS, Spring Framework, Bootstrap, Internal Builder tools, Rest Apis, AWS Technologies like S3, SWF, SQS.

Objectives of the project: Building a portal for prioritization of freights, mold an algorithm for the same, and building services and client facing portal for the same, while taking care of scalability , load balancing and actual cost of resources.

Outcomes of the project: Pushed the same into production in its first phase.

Major Learning Outcomes: Learned new frameworks, but the major learning was pertaining to load balancing, optimized scheduling , and maintaining scalability of the system.

Brief Description of working environment, expectations from the company: The environment at the company is quite casual in the sense that you can wear what you want, come when you want and there is always the option to work from home. Apart from that, experiences will be team dependent. In most teams, the manager's are quite understanding, and taking leaves, etc. is not a problem. However, there are quite rigorous timelines to be met for deliverables.

Name: Chitra Kalyanasundaram (2015H103090P)

Student Write-up

Short Summary of work done during PS-II: Amazon Team: Seller Success and Rewards (SSR: Platform Development).

Designation: Software Development Engineer Intern.

The SSR team works to ensure seamless selling experience for Merchants/Sellers. Goods and Services Tax (GST) is an upcoming system of taxation in India which will merge many individually applied taxes into a single tax. GST is expected to be applicable from 1 July 2017 due to which sellers will have to be GST compliant in order to have a seamlessly selling experience on Amazon.in. I worked on Project: GST, which gave me a lot of exposure to work in an Agile Software Development Process. Working with the experienced people in the team gave me an opportunity to learn the best practices of Java 8, Angular JS and JSP; apart from Git, Amazon Internal Tools, Data Store and Frameworks.

Tools used (Development tools - H/w, S/w): Java 8, Angular JS, JSP. Amazon Internal Tools and Frameworks.

Objectives of the project: 1. Incorporate Goods and Services Tax (GST) in the Seller Registration Process.

2. GST Interceptor for Compliance.

Outcomes of the project: Objectives have been met by enabling the sellers to update their GST Details, eventually ensuring seamless selling experience, even after GST comes into force.

Major Learning Outcomes: Best Practices: Java 8, Angular JS, JSP. Amazon Internal Tools and Frameworks.

Brief Description of working environment, expectations from the company: Working culture is very good and it helped me further improve my technical and non-technical proficiency.

Name: Rahul Punyani (2015H112180P)

Student Write-up

Short Summary of work done during PS-II: I had 4 objectives to achieve during my internship. Two of them were building automation tools for amazon's internal workflows. UI and integration was my responsibility and i actively contributed in backend services. Other two tasks were to enhance existing workflows as a result of new business requirements.

Tools used (Development tools - H/w, S/w): NoSql Databases, Java, Spring Framework , HTML , CSS , Bootstrap.

Objectives of the project: 1. Build UI for automation tools built for removing manual workflows.

2. Integration with back end services.

3. Enhancements of workflow pipelines bases on new business requirement.

4. Build service to upload critical data securely to Data-ware house

Outcomes of the project: 1. Flow of data from Database to Data-ware house was migrated to redshift.

2. An automated tool to satisfy amazon internal workflow which took 4 days to complete now took less than 15 minutes.

Major Learning Outcomes: NoSQL database, Java, JavaScript, Html, Bootstrap, CSS, Spring Framework, Coral Services.

Brief Description of working environment, expectations from the company: Amazon work culture is really awesome. There is no time boundations. Thw work quality is really advanced. They insist of exploring new and new technologies and not just rely on legacy ones. They follow deadlines concept by setting reasonable deadlines to complete a set of tasks.

Name: Abhishek Thakur (2015H112174P)

Student Write-up

Short Summary of work done during PS-II: I did the migration of internal tools used by my team to a horizonte stack from the native Mason stack. It involved the task of reading the old code and creating new tools in stack adhering to MVC architecture using spring MVC.

Tools used (Development tools - H/w, S/w): IntelliJ, BRazil build system.

Objectives of the project: Migration of internal tools.

Outcomes of the project: Migrated all tools.

Major Learning Outcomes: Got a significant insight in designing and developing tools from scratch using spring framework.

Brief Description of working environment, expectations from the company: The work and life balance is good and everybody is really helpful.

Name: Sanya Jain (2013A7PS188P)

Student Write-up

Short Summary of work done during PS-II: I worked with the Offer Listing Page Team of Amazon:

1) Migrated Amazon global seller changes on Seller Profile Page from perl/mason framework to a new technology internal to Amazon (Java based stack) according to the given use case.

2) Extended support in Amazon Seller Profile Page launch by addressing different pre-launch issues. This involved understanding the old codebase (perl/mason based) and new codebase (java stack based) and resolving different issues.

3) Worked on a new feature request from scratch on Offer Listing Page that involved both backend (using an internal Amazon query language similar to Prologue) and frontend work (coding jsps using Amazon internal tool to render HTML for UI changes).

Tools used (Development tools - H/w, S/w): Amazon internal tools, Wireshark, Eclipse, Java, MVC, Perl, Mason.

Objectives of the project:

1) To drive a new feature request on Offer Listing Page that would enable the customers to have an optimized experience while shopping.

2) To extend support in the ongoing migration process from a perl/mason based stack to Java based stack.

Outcomes of the project:

1) The first iteration of the new feature request is development complete.

2) Seller Profile Page in JP marketplace is launched.

3) Amazon global seller changes made for Seller Profile Page are out in production and no subsequent issues were faced.

Major Learning Outcomes:

1) Each dev-task involved writing code and corresponding unit tests to cover each line of code. This results in thorough testing of the code written.

2) All the changes undergo code review process that have helped me in improving coding standards.

3) Professional ethics.

4) Time management.

Brief Description of working environment, expectations from the company: Amazon has flexible working hours. I liked the overall working environment though sometimes devs overwork to meet deadlines or to handle escalations.

As an intern, I got to work on things that full timers work on so overall it was a good experience.

Name: Shailly Nigam (2015H103091P)

Student Write-up

Short Summary of work done during PS-II: Work is related to internal services of Amazon and was mainly in Java and Spring MVC framework.

Tools used (Development tools - H/w, S/w): Spring MVC framework, Java, Javascript, JQuery, JSP, Mockito, JUnit, powermock.

Objectives of the project: To help team members is debugging event failures in team's platform.

Outcomes of the project: A successful debug tool.

Major Learning Outcomes: Improved coding skills and standardized ways of designing and coding.

Brief Description of working environment, expectations from the company: Helpful, Good environment.

Name: Zubair Amin (2015H103097P)

Student Write-up

Short Summary of work done during PS-II: Creation of a new service for Amazon Now for notifying the sellers about the orders rejected by a customer at the time of delivery.

Tools used (Development tools - H/w, S/w): Spring MVC, spring beans, Dynamo DB, SQS, SNS.

Objectives of the project: Notification system for sellers during any order rejects.

Outcomes of the project: It helped the organization to retain its seller base by increasing the trust of sellers on Amazon. It also contributed in reducing the losses incurred by sellers by reducing the gap between the refunds clawed back from seller account and the reject inventory received back by the seller.

Major Learning Outcomes: Software design, coding skills and learning of new technologies like Spring MVC, spring beans, Dynamo DB, SQS, SNS etc. are the key learnings made during my internship.

Brief Description of working environment, expectations from the company: Nice working environment in which you are the owner of your project.

Name: AYUSH KUMAR (2012B1A7694G)

Student Write-up

Short Summary of work done during PS-II: Making changes in the Amazon retail checkout flow for IN marketplace.

Tools used (Development tools - H/w, S/w): Sublime Text, Browser.

Objectives of the project: To make changes in the retail checkout flow to enable certain business requirements.

Outcomes of the project: Company expects the same dedication from an intern as from a Full time employee. Amazon has a set of leadership principles, on the basis of which the employees are expected to work with. The working environment is good.

Brief Description of working environment, expectations from the company: Understanding the code flow of Amazon's checkout flow for all marketplaces.

PS-II Station: Amazon Development Center, Chennai

Mentor

Name: Akhilesh Gupta

Designation: Dev Manager

Comments: He contributed well in development of tool which help to justify market claim. He did great job in getting the requirements, design and finally deliver. He interact with different team members to get the information, used that information to fix major issue in framework and app.

Name: Abbas Suterwala

Designation: Software Development engineer

Comments: Tirth is a very focused and dedicated. He is very driven. He took up major codding task and completed them very very. His code quality is really good.

Name: Someshwar E

Designation: Manager, Alexa Voice Operations.

Comments: Review for Sai Srikar Kuravi During the course of his internship, Srikar has done a good work. He completed all the tasks assigned to him. He met all his deadlines even though the tasks were not straight forward. His level of understanding the problem statements is quite good. His strong analytical skills helped him finish his tasks right on time. He has strong commitment levels and is never hesitant in taking up new tasks. Although few basic skills like naming conventions in codes and design skills were not strong enough, during the course of internship he showed a great progress.

Name: Abhas

Designation: Project Manager

Comments: Work has been satisfactory and has significant contribution to the project development.

Name: Deepan Raj Jothilingam

Designation: Software Developmemt Engineer, Device Software Technology

Comments: She possesses good fundamental knowledge which helped her to contribute well on all the projects she has worked irrespective of the technology or domain. She has developed a good understanding of Amazon systems in a short period. With my interactions with Lavanya, I noticed that she dives deep into the problem and tries to come up with different solutions. She has good design skills which she has applied in the tasks assigned to her. Lavanya was assigned to create a DynamoDB instance and a Web service. She got very minimal guidance in this task. With the help of public documentation she has quickly completetd the task and integrated the DB with the service. Lavanya has shown good ownership skills in her tasks and she picked up the industry standard coding skills faster which helped her deliver results with ease.

We expect interns to be strong in CS fundamentals and coding which eventually will help them pick up any task and contribute in a fast paced environment. We expect interns to work independently by resolving the conflicts on their own and with minimal guidance whenever needed. Also, it is good to express their ideas loudly without hesitation.

Faculty

Name: Pradheep Kumar K

Comments: The industry looks for students with courses on IoT, Big Data Analytics. They need to develop skills on cloud computing and data analytics

Student

Name: Sriya Ganesh Aiyer (2013A7PS115H)

Student Write-up

Short Summary of work done during PS-II: Created an Offer Validator that would do syntactic validation in a schema definition language and semantic validation in Javascript. Core development work involving coding in Java mainly, unit testing, integration testing.

Tools used (Development tools - H/w, S/w): Java, Intellij.

Objectives of the project: Validate the syntax and semantics of an Offer.

Outcomes of the project: Offer Validator.

Major Learning Outcomes: Java design patterns, good coding skills.

Brief Description of working environment, expectations from the company: Flexible timings, high expectations, approachable mentor and manager, read and be aware about various frameworks, tools and technology, take ownership of your code.

Name: Sudhindra Sarma (2012B3A7632H)

Student Write-up

Short Summary of work done during PS-II: Memory Monitoring Tool:

I have worked on development of memory monitoring tool specially developed for Kindle devices. It is a light-weight and useful memory monitoring tool to visualize application's memory consumption trends and identify memory leaks and memory optimization areas with call trace information. There are many open source tools like Valgrind were used for memory analysis which has many limitation for e.g. these tools themselves consumed lot of RAM and many timeout issues occurred and the devices become slow and unpredictable. Download Metrics Tool: A weekly check of failed or delayed book downloads is done to find bugs or optimize the present algorithm. A manual work of filtering device types and downloading

logs had to be done. After downloading the logs, each of the logs had to be analysed manually for filtering out false positives. This would take few days and by then, the next week download metrics have to be analysed and reported. For a developer, this would be hectic and is a never ending process. I built a tool from scratch to automate the entire process mentioned above. This task completes within minutes. Bugs: Apart from the above projects, few major and critical bugs were also assigned to solve within a day or two.

Tools used (Development tools - H/w, S/w): Kindle is developed on Linux kernel, and all the development is done for Linux platform.

Java is mainly used for UI and platform level development. C/C++, python and shell scripting are used at system level development.

Objectives of the project: The memory monitoring tool developed will be used across the teams to optimize the memory consumption of their processes. Since Kindles are low RAM devices, there was a need of light weight memory monitoring tool.

Outcomes of the project: The tools I developed are internal tools for monitoring and optimization. The memory monitoring tool is used across the teams in Kindle development to track memory leaks and find places to optimize the memory.

The Download metrics tool is used by developers to find failed or delayed downloads on Kindle device from logs. This tool has definitely saved lots of man-hours spent in downloading of appropriate logs and removing false positives. The developers can directly analyse the true failed or delayed book downloads if there any.

Major Learning Outcomes: Working in a company like Amazon gives you an end to end understanding of product development to its sales. Amazon insists on best coding practices and one can learn the best industry practices of software development and testing.

Brief Description of working environment, expectations from the company: Amazon works on cutting edge technologies and on products every person wants to own. In Amazon Chennai, there are lots of product development teams working on Kindle, Alexa devices, Fire TV and other home products. For Kindle, most of the development work above kernel level, like platform, middleware, UI/UX of takes

place in Chennai. Interns from colleges like BITS and NITs, usually get good projects on these devices. Every intern gets a mentor and they are really helpful and give many insights on your work.

Amazon insists on best coding practices and there is a lot product development work happening, so work can get hectic at times but if you are really into coding, you can get the best experience from here.

Name: Tirthankar Saha (2013A7PS055H)

Student Write-up

Short Summary of work done during PS-II: The work involved learning various concepts of design level problems and applying the same in order to create a new service to provide support for the products for the company on both the product side as well as the server side.

Objectives of the project: Successful implementation of the desired services and reach a state that is production ready.

Outcomes of the project: The product side implementation was completed successfully, although the server side implementation is still in the pipeline.

Major Learning Outcomes: Code extensibility, Industrial standards for better coding practices, Design implementations and practices for practical problems.

Brief Description of working environment, expectations from the company: The working environment gives exposure to a wide range of opportunities. The organization expects students to make full use of the resources and exposure it provides and convert it into production ready code that may have a major impact on the services the company provides.

Name: Sai Srikar Kuravi (2012B3A7557H)

Student Write-up

Short Summary of work done during PS-II: I was assigned to Alexa Voice Operations team in Amazon Development Centre, Chennai. I got a chance to work on upcoming devices and upcoming features of Amazon Alexa. My task was to statistically analyze the performance of a new Alexa feature. It involved observing outcomes of the new feature, separate failures and pass cases, analyze fail cases and come up with the reason for failure, find logic to eliminate false failures and finally calculate true performance metrics etc. Most of my work was in python and java. I got a chance to understand the life cycle of Alexa and in general more on how voice based systems work.

Tools used (Development tools - H/w, S/w): Software tools: Internal Amazon developer tools.

Hardware devices: Amazon echo, echo dot and few upcoming devices.

Programming Languages: Python and Java.

Computer Science Principles: I got a chance to see the use case of FST's from TOC in speech based models.

Objectives of the project: Software development.

Outcomes of the project: Improving statistical performance of a new feature.

Major Learning Outcomes: During the course of the internship,

1. I have improved a lot in my coding standards.

2. I have learnt many best practices to be followed in designing a new package.

3. I got to know about the need for good naming conventions in codes (This might not sound as a significant outcome, but honestly, this is one of the most important skills a coder must possess).

4. Effectively communicate in mail threads etc.

Brief Description of working environment, expectations from the company: Firstly Amazon Development Centre, Chennai is the only centre outside Seattle that works on physical products like Alexa, Kindle, Fire TV etc. So work here is really challenging.

Work Environment:

Work environment is the biggest plus of Amazon for an intern, because

1. Flexible working hours,

2. Very talented peers who are always willing to help

3. Good development work (not routine Web dev related work) with healthy competition

4. Frequent discussions, suggestions and feedback from mentor and manager from time to time.

5. Chance to work on core computer science concepts like OS, Networks etc. Also chance to work on upcoming features and devices.

6. Finally, Chances to get converted depends only on intern's performance and nothing else.

Amazon has pretty high expectations:

Coding Standards: Amazon expects very high coding standards. Good design principles while coding. Also, very strong OOPS concepts.

Data Structures and Algorithms: Efficient implementation of DS and Algos where ever necessary. (This does not mean use tries or Red Black trees frequently, It means for a given problem, use efficient data structure or algorithm)

Good understanding of core concepts of OS (like process, threads, deadlocks etc.) is a requirement for some teams like Kindle.

Name: Lavanya B (2015H103080P)

Student Write-up

Short Summary of work done during PS-II: Code Analysis Tool.

Code Analysis Tool is an IntelliJ plugin that works with IntelliJ and Android Studio IDEs.This provides porting instructions, diagnostic information by inspecting the application's source code and log files. The tool analyzes the code and logs, provides suggestions and performs automatic code insertion.

Web service and Android application development.

Research project that enables Amazon promoters to connect with Amazon customers. This project was a great learning experience as it involved me building it from scratch. I started by gathering requirements, then the design and implementation. This task comprised of developing a test application to, a back-end service with connection to Dynamo DB and an application that receives.

Tools used (Development tools - H/w, S/w): Android Studio, Eclipse.

Objectives of the project: Adding new features, web service development, android application development.

Outcomes of the project: Added features to the code analysis tool, developed a web service integrated with Dynamo DB and an android application.

Major Learning Outcomes: I learnt many new technologies, best coding practices, good coding styles.

Brief Description of working environment, expectations from the company: The working environment was great with helpful and knowledgeable people around. The major expectation from the company was to have a strong base in data structures, computer science fundamentals and algorithms.

PS-II Station: Amazon Development Center, Delhi

Faculty

Name: Ashish Narang

Comments: Amazon, is an American electronic commerce and cloud computing company that was founded in 1994 and is based in Seattle, Washington. It is the largest Internet-based retailer in the world by total sales and market capitalization. Amazon Development Centre, Gurgaon is focused on improving the last mile delivery services and automating registration workflow for 3rd party sellers. Recently, they have started using Natural Language Processing techniques to automate seller registration process. Interns are expected to work on latest technologies including Java Springs, Horizonte, Angular JS, Node JS, Python, Dyanmo DB and many other proprietary tools//services of Amazon. Organization look forward to have interns who have knowledge of cloud computing, Artificial Intelligence and have excellent programming skills along with good oral and written communication skills.

In order to have better internship experience, students must learn one of the Version Control System (Preferably GIT), revise courses Object Oriented programming, data structures, design patterns and follow standard coding guidelines.

Student

Name: Ines Khandelwal (2013A7PS053P)

Student Write-up

Short Summary of work done during PS-II: Built a referral system for sellers on Amazon.

Tools used (Development tools - H/w, S/w): Software: Java Development.

Objectives of the project: To build a referral system for sellers on Amazon.

Outcomes of the project: Built a referral system for sellers on Amazon.

Major Learning Outcomes: Enterprise style coding.

Brief Description of working environment, expectations from the company: Typical IT work environment. Work is highly team specific.

Name: Monalika (2012B1A7659G)

Student Write-up

Short Summary of work done during PS-II: Brand Registry -- registered brand owners registering as seller. Made registration pipeline for the newly launched brandregistry.amazon.com.

Tools used (Development tools - H/w, S/w): Java, Javascript, AUI, Ruby.

Objectives of the project: Registered brand owners registering as seller. To prevent fraud sellers registering as "recognized" brands.

Outcomes of the project: Delivered before time.

Major Learning Outcomes: WebApp development

Brief Description of working environment, expectations from the company: Amazon Development Center, Delhi has a very welcoming environment towards the interns. People help you grow as an individual and as a software developer.

Expectation from the company:

1. Fast Learning

2. Deliver Results

3. High growth rate

Name: Rohit Goyal (2013A7PS024P)

Student Write-up

Short Summary of work done during PS-II: The main work during PS-II was to solve a business problem for extracting information from unstructured documents. This involved much of the research work and doing POC (Proof of Concept). The main technology used is NLP (Natural Language Processing) and the programming languages are Python and Java.

Tools used (Development tools - H/w, S/w): S/w - Python, Java, NLTK, StanfordCoreNLP.

Objectives of the project: To extract information from unstructured documents using NLP (Natural Language Processing) and continuously enhance the results based on the previous outcomes.

Outcomes of the project: The project was successfully completed and the work was given a good shape. The final production code was written and submitted.

Major Learning Outcomes:

1) Coding practices followed in industry.

2) Git and version control.

3) NLP (Natural Language Processing).

4) Machine Learning concepts and applications.

5) Formal documentation of work.

Brief Description of working environment, expectations from the company: Working environment is good. The facilities provided are awesome. The team is always reachable for help. The main thing is that there is proper and regular follow-up for the work. So, it provides a good professional experience. The expectations of the company are to complete the assigned work on time and reach out to them for any help needed.

Name: Manit Gupta (2013A7PS120P)

Student Write-up

Short Summary of work done during PS-II: Had a great time using new tools like AWS S3, Redshift and SQS. Frontend developing using Django and Python. Also had a chance to work with a variety of databases like DynamoDB offered by Amazon as well as other internal Amazon databases.

Tools used (Development tools - H/w, S/w): S3, SQS, GIT, MySQL, Django.

Objectives of the project: Create Seller Reimbursement and Clawbacks Engine.

Outcomes of the project: API through which reimbursements to sellers are done.

Major Learning Outcomes: Learning about the complete architecture of the Amazon wide delivery.

Systems and applying my knowledge to debug issues and completing the testing for timely delivery of the projects.

Brief Description of working environment, expectations from the company: One of the biggest plus points at Amazon is the amount of knowledge one can gain continuously. There seems to be no saturation point whether you are a fresher, a person with 2 years of experience or someone with 10 years of experience. The breadth of technologies and continuous improvisations, that too with increasing scalability, just keeps one excited. The work is always customer oriented and the impact of

the smallest of changes can directly be seen through the customers. Also, the amazing number of tools present at Amazon make the job so much more fun and easy for a developer. There is literally a tool for everything. The work culture is generally good and the work environment largely depends on the team. All in all, great place to learn and work.

Name: Swarnim Singhal (2012B4A7702P)

Student Write-up

Short Summary of work done during PS-II: Worked on the store-app under the IHS team of Last Mile technology. The main objective was to build support for database in the app itself so that efficiency improves as well as app can function without internet.

Tools used (Development tools - H/w, S/w): H/W: Macbook pro.

S/W: Android Studio, IntelliJ, Amazon tools , GIT.

Objectives of the project: Support the store-app operations in offline mode as part of the integration project of the StoreApp and the RabbitApp.

Outcomes of the project: App Database along with an offlineAgent which supports the offline operations of the store-app.

Major Learning Outcomes: Android basics and advanced concepts: Services, Content Providers, AIDL.

Brief Description of working environment, expectations from the company: Since shifting to new office, the facilities have greatly improved. Team members are very motivating and provide help in whatever way they can. During March-April, 4 of the members left the team due to which we had to deal with severe bandwidth issues. However the team coped up well and have their best to develop the project and launch the app after a 2 week delay (which was acceptable).

Name: Ishan Chutani (2013A7PS112P)

Student Write-up

Short Summary of work done during PS-II: The current geocoding service used by Amazon involves the use of BingMaps and Cached Data. This service is called StoreLocatorService, and is on the path of deprecation. A new Geocoding Service developed by the Amazon Geocoding team is meant to replace it. This report contains the details of merging the StoreLocatorService with the new geocoding service API.

Tools used (Development tools - H/w, S/w): Geocoding addresses, BingMaps, MapMyIndia, DynamoDB.

Objectives of the project: Geocoding Locations of pickup points.

Outcomes of the project: Migration of services.

Major Learning Outcomes: Geocoding Addresses.

Brief Description of working environment, expectations from the company: The work environment is really motivating and supportive. All the engineers whether at a senior level or at a junior level are extremely helpful.

Name: Prayatna Ghosliya (2013A7PS194P)

Student Write-up

Short Summary of work done during PS-II: Automated ticket handling process for amazon.

Tools used (Development tools - H/w, S/w): Brazil, Intellij.

Objectives of the project: Automating ticket handling process.

Outcomes of the project: successfully automated ticket handling process.

Major Learning Outcomes: Spring, git hub, elastic search, design patterns.

Brief Description of working environment, expectations from the company: I was part of TRM (transport request management) team in gurgaon. My team handles shipments in different geographies

and there get a lot of trouble tickets. My project was to design an engine which can automatically resolve these tickets. During my internship i gained knowledge about elastic search and various aws services. While developing the tool i applied various design patterns which i have learned in college.Internship at Amazon (TRM) has been a lot of learning, tremendous exposure. I appreciate the opportunities and projects that were assigned to me, since the projects I have done had huge Business Impact for TRM. During my internship, I also got to experience first-hand the kind of customer obsession that each and every person working here shows and it gave me a perspective of how great companies are built.

PS-II Station: Amazon Development Center, Hyderabad

Student

Name: Sruthi Sagi (2013A7PS499H)

Student Write-up

Short Summary of work done during PS-II: I was assigned the task of delivering a text validation framework for Amazon brand pages content. The framework demanded incorporation of the functionalities of grammar checking, language detection, html validation, excess bold detection, contact information and url detection. My work started with a deep dive into the possible approaches to satisfy each of the use cases, explore various NLP tools to achieve grammar checking and language detection. After a deep study, I had to compare all the approaches, conclude on the best approach and implement all the functionalities in an efficient way in Java using Google Guice dependency injection framework. The implementation included text preprocessing to enable application of ML based NLP algorithms of POS Tagging, grammar check and language detection. We used open source tools LanguageTool, Cybozu Language Detector and Stanford POS Tagger to achieve the validation goals.

Tools used (Development tools - H/w, S/w): Java, Spring MVC, Google Guice.

Objectives of the project: Deliver a text validation framework for their brand pages.

Outcomes of the project: A validation service was delivered with the following functionalities: grammar checking, language detection, html validation, excess bold detection, contact information and url detection.

Major Learning Outcomes: Major learning outcomes were understanding NLP basics, learning the concept of dependency injection, and strengthening OOPs concepts.

Brief Description of working environment, expectations from the company: Amazon is a great PS station to develop your technical skills as well as gain exposure to the corporate world. As an intern at Amazon I got to work on an innovative project in which I could develop my problem solving and coding skills. Diving deep into the problem and dealing with ambiguity are two very strong points that are expected from interns and help you learn a lot. Teams in Amazon give you a competitive environment to discover your potential and learn from peers. Technically I have developed my coding skills and

problem-solving skills interacting with the senior engineers in my team. Knowing more about Amazon's businesses and leadership principles exposed me to the corporate world. With a wide range of teams and technologies used, Amazon gives an idea of different levels of career and makes you better equipped to make career decisions. Overall internship at Amazon was a great opportunity for technical growth, personality development and exposure to corporate world.

Name: Sree Nihit Munakala (2012B1A7740H)

Student Write-up

Short Summary of work done during PS-II: Development of a test framework for the Shopping Cart team by mocking downstream services. The Amazon Cart service relies on numerous internal Amazon services for data, which aren't available or are unreliable for testing purposes. This problem was overcome by mocking the responses returned by these services for the purposes of regression testing.

The project encompassed the development of a prototype that demonstrated the use of an internal Amazon tool to mock downstream services, the development of a new test package that leveraged this internal tool, and writing tests using this newly created package.

This test package and regression tests were developed for the new Cart service that was being developed by Amazon.

Tools used (Development tools - H/w, S/w): Java, spring.

Objectives of the project: Development of a test package and tests that mocks downstream services for regression testing of the Cart service.

Outcomes of the project: The expected outcomes of the project include the automated testing of the new cart service, without being reliant on downstream services. This would speed up development and deployment of software, and reduce ambiguity in terms of the quality of code.

Major Learning Outcomes: Major learning outcomes include understanding the software development process at Amazon, the testing process being employed, the business logic and structure of the Amazon Cart service and the development of a new test package.

Brief Description of working environment, expectations from the company: The working environment at Amazon is that of independence. The expectations are set by the mentor and manager, and the mentor serves to provide assistance and guidance for making progress.

There is a large amount of freedom, in terms of working hours and how you approach your work, as long as the goals are being met. There is zero flexibility to choose a team (which is randomly assigned) ahead of time, and the project is likely to have been decided ahead of time, but you may have the flexibility to choose projects a few months into the internship.

You are likely to face steep learning curve, to get comfortable with the myriad of development tools required by a developer. These practices are usually universal among software development at large companies so it serves as a good way to become acquainted with these tools.

You may have to put in long hours to finish your work if you are running behind schedule, but for the most part the amount of work you put in is fairly balanced. However, these aspects of the internship can vary wildly from team to team, as the work environment and the nature of work are highly localized to individual teams.

Name: Aahlad Chandrabhatta (2013A7PS275H)

Student Write-up

Short Summary of work done during PS-II: My work involved creating a service which collects data related to shipments, like carrier information, seller information, product information, time of shipment, time of delivery etc. This service would act as a one stop data center for shipment related information. I worked on Java and used AWS to complete ths project. It was a pure coding project. The design had bee decided beforehand and only the implementation part was given to me.

Tools used (Development tools - H/w, S/w): Java, spring, AWS.

Objectives of the project: To create a service which would act as a one stop data center for shipment related information.

Outcomes of the project: A service acting as a one stop data center for shipment related information.

Major Learning Outcomes: SOLID principles of Object oriented programming, SPRING (beans), AWS.

Brief Description of working environment, expectations from the company: Amazon provides a very flexible working hours. There are no compulsory working hours as such. You can walk in and walk out whenever you feel like. The only expectation is that you complete the task you were assigned. If you're hoping for a PPO, make sure you finish the work assigned and ask for more. The more enthusiastic you seem about it, the more your chances are. You won't be spending much time with your manager, but make sure to know what he expects from you (e.g. the timeframe in which he expects you to finish the work etc.) REGULARLY. You also are expected to take ownership of the work you do. Do not hesitate to ask any questions you have. Stay in contact with other teams you have dependency on. Workplace is pretty friendly, and everyone in the company is a workaholic (that's not necessarily a bad thing).

Name: Aditya Nadimpalli (2012B3A7474H)

Student Write-up

Short Summary of work done during PS-II: I worked on two major projects during my PS-2 at Amazon. The first involved implementing server-side throttling in two of the software services built by the team I joined. Server-side throttling is a mechanism by which a web service restricts the number of incoming requests made by clients. The second project involved Amazon SQS (Simple Queue Service). Amazon SQS is used in building asynchronous web services, and the project I worked on involved providing a store, search and retry functionality for SQS messages that failed to get processed.

Tools used (Development tools - H/w, S/w): I coded all my projects in Java. In addition, the following tools were used:

1. Simple Queue Service (SQS), a part of the Amazon Web Services (AWS).

2. Mockito/JUnit for testing code.

3. Java's Executor Service for implementing multi-threaded programs.

4. Aurora, a MySQL compatible RDBMS offered by AWS.

Objectives of the project: Project 1 - Server Side Throttling. The objective was to limit the number of incoming calls from clients to a web service. I used internal Amazon APIs for implementing this, and these APIs implemented a version of the Token Bucket Algorithm for limiting client calls.

Project 2 - Managing Failed Messages in Amazon SQS. Amazon SQS is a system used to send data in the form of messages between various interacting web services. When a message sent to a web service is unable to be processed by that service, it is generally sent to a Dead Letter Queue (DLQ). The objective of this project was to provide an alternative service to the DLQ, one that allows users to store, search and resend messages that were initially unable to get processed.

Outcomes of the project: Project 1 - Server side throttling helped control the number of incoming client requests, which helps protect the web service from excessive memory and CPU utilisation. Further, it reduces the load on other web services which this web service depends on.
Project 2 - The program that I implemented allows users to search SQS messages that initially failed to get processed and selectively resend SQS messages chosen by the user.

Major Learning Outcomes: I learned a lot about writing industry-quality Java code. This includes writing code that is testable, well-organised and thread safe. I further got to work with problems such as downloading and processing large amounts of data as quickly as possible and designing multithreaded Java programs.

I also got exposure to Amazon SQS, which is a key component of the Amazon AWS.

Brief Description of working environment, expectations from the company: The work environment is really good at Amazon. I got to work with and learn from people who are very strong in coding and other areas of computer science. There is high standard of quality expected from any technical project done. Any code or design you implement will be closely reviewed by your team. However, one drawback is

that most of the work involves Java based software development, and opportunities to work in more research related areas such as data science, AI etc, are less.

Name: Sree Ravitheja D (2012B2A7436G)

Student Write-up

Short Summary of work done during PS-II: Regression Testing Automation of Marketplace Metadata.

Objectives of the project: Regression is the testing process to validate metadata changes which needs to be ported on to a platform.

Outcomes of the project: Software development including design, coding, testing and reviewing. Also integration of some AWS services such as S3, DynamoDB and SWF.

Major Learning Outcomes: Software development including design, coding, testing, reviewing, etc. Also integration of some AWS services such as S3, DynamoDB and SWF.

Brief Description of working environment, expectations from the company: Working environment is good. A mentor is assigned to you at the start of the internship who guides you throughout. They expect good development skills (design principles, coding, testing and documentation) and good knowledge of DSA and OOP.

Name: Manya Setia (2013A7PS167P)

Student Write-up

Short Summary of work done during PS-II: The project entailed re-architecting the Your Orders page at amazon.com to incorporate details specific to my team, Value Added Services. It involved full stack web development, since the changes needed to be incorporated in both, back-end as well as front-end.

Tools used (Development tools - H/w, S/w): (S/w) Java, JS/CSS, JSP, spring Framework.

Objectives of the project: The objective of the project was to provide a seamless experience for services, as already exists for products at Amazon.

Outcomes of the project: The outcome was a new web page for services. I created the base web page, and it can be improved upon further by the team easily.

Major Learning Outcomes: I learnt about how the flow of completing a service differs from that of a product delivery. I also learnt how to apply core CS principles to produce extensible and modular code. I gained insight about various technologies such as the spring framework, and testing frameworks such as JUnit and Mockito.

Brief Description of working environment, expectations from the company: The culture at amazon is such that it helps you to develop and sharpen your technical skills by learning from your peers. There are regular brain storming session for design problems where you gain a lot of knowledge. Weekly Friday learning series sessions by peer members of the team help in being up to date about the happenings in your team and share knowledge. My manager and mentor were always very helpful in guiding me to the right point of contact for every problem. As far as the expectations are concerned, at Amazon, you are expected to raise the bar regarding every aspect of your work. Moreover, there is a great focus on the principle of ownership. You are expected to 'own' your code, you are expected to take initiatives to improve it, you are expected to test it and you alone are responsible for the success or failure of it. You are expected to do this because you 'own' it and not because your manager or any other person told you to do so. So the work environment is especially great for developers who are starting out, and wish to hone their skills as it gives exposure to end-to-end software development.

Name: Shubham Porlikar (2013A7PS054P)

Student Write-up

Short Summary of work done during PS-II: My project was to design and implement an user-interface for an internal service. I first created a few mock-ups for the design of the UI. Some time was spent in doing POCs (proof-of-concept) for the libraries and tools to be used. Then, I started the development of the user-interface. Using a Javascript library (vis.js), I was required to draw a tree-like structure for a

platform definition which would be input to the UI in the form of a JSON file. Angular2 framework was used for client-side rendering of data. A table supporting add, update, delete functionalities was added using Angular2. Some manipulations were required with the data to give the user the required view. Then, I setup a NodeJS server to serve the UI. I used webpack as a bundler which handles dependencies and the order of imports for the modules on which our application depends. Gulp was the task runner used to handle build and other tasks. Some time was spent on styling and making the UI look clean. Bootstrap was used for styling, and some other libraries were also used to add some more features like a tooltip, toaster, modal, etc. Next, I added authentication and authorization for the UI as the access was required to be restricted. Finally, I deployed my code using Amazon specific tools.

Tools used (Development tools - H/w, S/w): Software Development: HTML, CSS, Javascript, Angular2, NodeJS.

Objectives of the project: The objective of the project was to show the platform for a service in the form of a tree. The nodes and edges of the tree would show the dependencies of the platform. If the platform has any issues, a user can look at the tree and can easily find out the cause of error. The aim was to give a quick visualization to the user so that the time to find the issue would get reduced.

Outcomes of the project: The user-interface was designed and implemented to satisfy the requirements. It looked clean and user-friendly. Using the UI, the time to resolve tickets (issues) by developers would be reduced. Also, the number of issues coming up would reduce.

Major Learning Outcomes: I was new to UI development. So, the learning curve was steep for me. I learnt about the latest technologies and tools used for UI developement. With an excellent guidance, I was able to meet my goals. I learnt the importance of following the best practices when writing code. I also learnt to always consider scale at which your service is going to operate when developing it.

Brief Description of working environment, expectations from the company: The work culture in my team and at Amazon in general is very good. All my teammates were very helpful. Whenever I faced an issue, I tried to solve it first, trying to look into different possibilities. But if I was unable to fix it even after that, my mentor and other teammates helped me. The work given to me was neither too less or too much. I was able to deliver the results in a timely manner. Overall, Amazon is a great place to work and my PS II experience was excellent.

Name: Aditya (2013A7PS157P)

Student Write-up

Short Summary of work done during PS-II: Developing pages for amazon.

Tools used (Development tools - H/w, S/w): Amazon internal tools.

Objectives of the project: Develop page.

Outcomes of the project: Page successfully developed.

Major Learning Outcomes: Amazon infrastructure.

Brief Description of working environment, expectations from the company: Delivering results.

Name: Rishabh Agarwal (2013A7PS148P)

Student Write-up

Short Summary of work done during PS-II: Made a logical layer over an existing internal tool to cater to general and specific use cases for managers and staff managers. The layer is generic and can be applied to all teams

Tools used (Development tools - H/w, S/w): Amazon internal tools.

Objectives of the project: To make a simple issue manager reporting tool.

Outcomes of the project: A simple issue manager reporting tool.

Major Learning Outcomes: How the existing tool worked. It's strengths and weaknesses.

Brief Description of working environment, expectations from the company: Very good competitive hard working environments.

Name: Akansha Gupta (2015H112181P)

Student Write-up

Short Summary of work done during PS-II: Project1: Sending repair status emails for repair in progess and repair shipped back to customer statuses. Implemented back end logic for when to deciding when to send emails, collecting data needed to populate email, creating html template for these emails. Project2: Validating encrypted repair status XML files received from vendors regularly. Validation included incorrect encryption, parsing failures and data constraint violations. Achieved using xsd validation.

Tools used (Development tools - H/w, S/w): Eclipse/Intellij for Java development, JAVA 8, Apache freemarker for email template.

Objectives of the project: Project1: To send repair status emails to Customers. Project2: XML file validator used by vendors in validating repair status XML files.

Outcomes of the project: Work in production.

Major Learning Outcomes: Designing Problems, writing quality code which is easily testable, stay updated with latest technologies.

Brief Description of working environment, expectations from the company: Company's expectations: continuous improvement in quality of code.

Name: Nayan Khanpara (2015H112179P)

Student Write-up

Short Summary of work done during PS-II: Amazon detail page feature enhancement. Web UI development and loading latency improvement.

Tools used (Development tools - H/w, S/w): IntelliJ.

Objectives of the project: To refactor the existing code to improve the customer experience in terms of UI and back-end processing.

Outcomes of the project: Effective UI and smooth operations of the feature.

Major Learning Outcomes: Ownership, Bias for action, Deep dive.

Brief Description of working environment, expectations from the company: Work culture is very good in terms of learning and overall development.

Name: Priyanshu (2013A7PS089P)

Student Write-up

Short Summary of work done during PS-II: Wrote static and machine learning based rules to detect people asking for false concessions (Abusive customers), based on their past history. And then put more friction on issuing concessions to them.

Tools used (Development tools - H/w, S/w): Java, spring, Dynamo DB, ElasticSearch Data Exchange.

Objectives of the project: Reducing concessions offered to customers and saving on concessions.

Outcomes of the project: Launched the project and it had a huge customer concessions saving.

Major Learning Outcomes: Machine Learning, spring.

Brief Description of working environment, expectations from the company: Nice working environment, good amount of learning.

PS-II Station: Amazon Fulfillment Center, Bangalore

Student

Name: Karan Saluja (2013A3PS232P)

Student Write-up

Short Summary of work done during PS-II: Identified various improvement opportunities and implemented solution for warehousing process. Served as a Site Lead for new upcoming site.

Tools used (Development tools - H/w, S/w): Excel/Macro.

Objectives of the project: 1.Tote Overflow Analysis.

2. SIOC Analysis.

3. Reporting Improvements.

4. Leading operations in new warehouse.

Outcomes of the project: Cost Saving, productivity improvements, stabilizing of operations in new warehouse.

Major Learning Outcomes: Better Communication Skills, better leadership skill, better peoples management.

Brief Description of working environment, expectations from the company: You will have to work out of warehouse. Environment completely different form regular corporate environment. Long standing hours (Upto 10hrs/day). Harsh working conditions. But one gets accustomed to it after sometime. Best place to develop yourself as a leader. There are very few companies that give managerial role to an intern. Best place to develop yourself as a responsible leader.

Name: Abhishek Gupta (2013A3PS198P)

Student Write-up

Short Summary of work done during PS-II: My work during the practice school was an integral part of the fulfilment center in which I was working. I was given the project to improve productivity of the site and was also given the responsibility of handling the shift as an area manager. I was no less than an employee and had as much right as an any other employee. I worked on MS Excel as part of my project and made templates for the site which will improve productivity. I did research on individuals and rated their performance. Based on my templates and research, the individuals were selected for each function. I was also a major part of the Great Indian Sale and handled one of the major functions of Operations during that time while also handling all the operations during normal days. I was also in-charge of some of the layout changes of the site.

Tools used (Development tools - H/w, S/w): MS Excel, MS powerpoint, Amazon internal tools (S/w)

Objectives of the project: To improve the productivity of the site.

Outcomes of the project: The productivity of the site was improved.

Major Learning Outcomes: As measured by Amazon internal server, the site productivity was improved as was individual performances. The site had a great sale and layout was also made as per Amazon standard.

Brief Description of working environment, expectations from the company: Operations is a very busy world and you might not be able to finish any task in the time that you are given. Time management skills are very important to thrive in this world. We need to be fast and agile. We should always have a plan ready for the day and should try to finish our tasks well in time. When pressure builds, the operations manager loses their cool at times and the environment is not good at those times. It all depends on the team and the manager. If both are strong, the working environment is very good and if either of them is not, it becomes very tough to work at times. But sale times, even though very busy, are very exciting and nothing can match those. Leaves and outings are not that much. It is very busy and very tiring. At times, you have to work on project and handle shift, which becomes very tough. But people are very helpful and will go out of their way to help you. Learning opportunities are immense. But you will have to not only work in night shifts but also juggle between day and night every two

weeks. Although it sounds scary but night shifts are the best and most of the work is done in night shift. Get your work done and no one will question you.

PS-II Station: Amazon Fulfillment Center, Gurgaon

Student

Name: Nikhil Shetty (2013A3PS259P)

Student Write-up

Short Summary of work done during PS-II: My projects were mainly related to the following two areas:

1. Improvement in Throughput: To bring about process improvements or additions so as to increase productivity. Time motion study of existing and suggested methods coupled with data analysis using Microsoft Excel was done to quantify improvements.

2. Improvement analysis of the metrics on benchmarking website, that provides visibility of various process values.

Tools used (Development tools - H/w, S/w): Microsoft Excel.

Objectives of the project: Productivity Improvement.

Outcomes of the project: Increase in productivity with respect to certain processes.

Major Learning Outcomes: Experience in analysis and breakdown of complex problems, data processing and presentation skills improved.

Brief Description of working environment, expectations from the company: Five working days per week with around eleven hours of office per day is quite hectic. Cab pickups and drops make commuting very convenient. Interns are given sufficient authority to bring about actual improvements. The firm expects dynamic and efficient people to deal with the constant and heavy work pressure.

PS-II Station: Amazon Fulfillment Center, Hyderabad

Student

Name: Ayush Agrawal (2012B5A8504G)

Student Write-up

Short Summary of work done during PS-II: My project was to increase the throughput per hour of the building.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Increase the overall output of the building.

Outcomes of the project: Increased the overall output of the building.

Major Learning Outcomes: People- Handling, Stress - Handling, Multi-Tasking.

Brief Description of working environment, expectations from the company: Company provides an excellent opportunity to develop people handling skills, multi-tasking and learn how to work under immense pressure.

PS-II Station: Amazon Operations, Mumbai

Student

Name: Tejas Harne (2013A3PS302P)

Student Write-up

Short Summary of work done during PS-II: Amazon Fulfilment Center, Mumbai was assigned to me as my PS-II center. The Fulfilment Center (FC) mostly deals with the Operations aspect of the Amazon Online E-commerce Business. It's like a middle mile between the customer and website. The customer orders are assigned to a specific FC in regards to the shipping and transport cost of the product. After that, FC is responsible for the fulfilment of that order.

There are two major depts. In FC – Inbound and Outbound. Inbound handles the receiving of the inventory and stowing them inside the FC. Outbound handles the picking, packing and shipping of the orders that are attached to that particular FC. I was allocated outbound dept.

The projects which I worked on, dealt with improving the productivity and quality of the outbound processes. My project involved meeting the target standards for Box Compliance and also improving the Associate Packing Rates by taking appropriate measures and changing the design of pack station. These were the two major operations projects I worked on during my PS-II.

Additionally, I worked on many Advanced Excel Macros in order to automate the existing manual process which were time consuming and needed a better and organized working system.

Tools used (Development tools - H/w, S/w): Advanced Excel Macros (VBA).

Objectives of the project: Improving the productivity and quality of processes.

Outcomes of the project: The projects were successful in terms of the set targets keeping in view the benchmark standards also being followed.

Major Learning Outcomes: Management Skills in Operations, Data Analytics.

Brief Description of working environment, expectations from the company: PS-II in Amazon Fulfilment Center (FC) is a great experience for those who are interested in Operations Profile. The interns get in at the designation of Area Manager. The working environment inside Amazon FC is totally different from

that of corporate offices. There is a shift concept – day and night. The shift lasts 10 hours and all the Area Managers have to be there half hour before the start of the shift and stay half hour after the end of the shift. The shift timings vary from FC to FC. There are many FCs spread all over India. The FC which I worked in, BOM4, had its shift timings as 09:30 to 19:30. Also, FC, being located in outskirts of the main city, cab facility is provided by Amazon for the managers.

There is a lot to learn in terms of man-management skills, process improvement techniques and data analytics. An Intern is mostly expected to work on projects and change and improve the existing processes. Advanced Excel Macros (VBA) prove to be a powerful tool for data analytics in operations and they help to reduce a lot of manual labor involved in the system by automating the processes.

Overall, the PS-II center is recommended for those who have immense interest in Operations profile. As the profile develops people connection skills and man management techniques, it can prove quite useful further ahead in career growth and development.

Name: Shubham Goyal (2013A3PS270P)

Student Write-up

Short Summary of work done during PS-II: I got to work on a few projects at my station majorly aimed at improving the quality and productivity of the inbound operations at my fulfillment center. The internship is for area manager profile, so majority of my internship work revolved around that. Being from software background, I also completed some projects on automation of data generation, involving use of VBA and MySQL.

Tools used (Development tools - H/w, S/w): MS Excel, MySQL.

Objectives of the project: To improve pick productivity and bin utilization by allocating designated spaces for each category in the inventory (Mall concept).

Outcomes of the project: Design plan for the same given and implementation started. Improvement in bin etiquette and reduction in consolidation opportunities.

Major Learning Outcomes: 1. Advanced Excel.

2. VBA

3. Leadership principles

Brief Description of working environment, expectations from the company: Most of the work involved here would revolve around management and operations, so prefer this only if you have interest in these fields. There is major scope of project work to be undertaken here and good work will be recognised and implemented immediately.

PS-II Station: Aruba Networks - Network Programming, Bangalore

Student

Name: Mohit Menon (2013A7PS110G)

Student Write-up

Short Summary of work done during PS-II: My project involved the setting up of a WLAN Controller and Access Point (AP) to enable the configuration of a Captive Portal. This was followed by a comparison of performance of the Captive Portal Authentication using 2 different web servers, which are Apache and Nginx. Their performance was compared and analysed using a number of tests and parameters such as no. of authentications, memory, CPU usage, etc. Once this was completed, feature addition to the existing system was initiated, and further testing of the feature(s) was required.

Objectives of the project: To analyse performance parameters for Captive Portal Authentication when the web server used was changed from Apache to Nginx. Feature addition and testing, for the new system.

Outcomes of the project: Nginx server performed better when it came to bottlenecks such as memory, CPU usage, etc.

Major Learning Outcomes: An insight into Networks being applied at a large scale. Experience of a corporate work environment.

Brief Description of working environment, expectations from the company: I was allowed to work at my own pace, in order to improve the learning process. The company expects you to be productive when you're at work. You get to work on projects just like a full-time employee. They are willing to offer PPOs (No interview process, it is based on your manager's decision) if you show interest in the work and are capable of completing assigned tasks.

Name: Mayank Totale (2013A7PS047P)

Student Write-up

Short Summary of work done during PS-II: A WLAN Controller is a device that management device used for managing APs and other controllers. This allows for working centrally and configuring thousands of devices under this controller. The controllers' have to be connected to each other and the APs using secure protocols like IPsec to avoid security attacks like denial-of-service or man-in-the-middle attacks. IPsec is used for encryption and authentication of packets at the network layer. IPsec encrypts packets based on Security Associations, which are established by the Internet Key Exchange (IKE) protocol. Aruba has its own proprietary implementation of the security suite that it uses in its devices. A new platform is being developed where the kernel will be responsible for handling the user traffic. In this scenario it has to also perform the IPsec functions. The project involved working on this new platform and perform all the necessary changes from the security point of view.

Objectives of the project: Make changes to security features in the Aruba controllers.

Outcomes of the project: The kernel now is able to handle the IPsec functionalities of the controller. This would allow the controllers to work on other applications over an IPsec tunnel.

Major Learning Outcomes: Learned a lot about Network security and networks in general. Also how things in a software company.

Brief Description of working environment, expectations from the company: I was allowed to work at my own pace, in order to improve the learning process. The company expects you to be productive when you're at work. You get to work on projects just like a full-time employee. They are willing to offer PPOs (No interview process, it is based on your manager's decision) if you show interest in the work and are capable of completing assigned tasks.

Name: S Bhaargav (2013A7PS005G)

Student Write-up

Short Summary of work done during PS-II: The project involves automation of the configuration of Controllers and Access Points (APs) through the WebUI based on a specific requirement, which is then followed by the validation of the above stated through WebUI and through CLI Commands. This project is performed using python scripts written on the existing PATA-NG framework along with the help of selenium library.

Objectives of the project: Automation of User Experience.

Outcomes of the project: Automated user experience.

Major Learning Outcomes: learnt using selenium-python.

Brief Description of working environment, expectations from the company: I was allowed to work at my own pace, in order to improve the learning process. The company expects you to be productive when you're at work. You get to work on projects just like a full-time employee. They are willing to offer PPOs (No interview process, it is based on your manager's decision) if you show interest in the work and are capable of completing assigned tasks.

PS-II Station: Aurigo Software, Bangalore

Faculty

Name: Mahesh Kumar Hamirwasia

Comments: In general, the students are good in adapting to the new learning environment. However, there are situations where students are not prepared in advance as the requirements in Industry are varied and latest eps. In terms of using certain softwares and operating certain equipment/machinery. Students in Aurigo Software, Bangalore are first trained on Aurigo Masterworks which is a company proprietary software. From this it is evident that students will always have new surprises in terms of learning and contributing in Industry. Needless to say, students may not be well versed with all the softwares used by Industry but as long as they are committed to learning, they have the ability to do it in real time. So, Industry is looking for students with an aptitude for learning.

Student

Name: Harsh Ambasta (2013A2PS568P)

Student Write-up

Short Summary of work done during PS-II: We attended training session after joining our PSII Station. Simultaneous a project was assigned to me to prepare Business Requirement Document to make Aurigo Masterworks ADA Compliant. After working on the project for about one and a half month, I submitted the findings and reports to the organisation. After this I received another project of preparing a business requirement document on competitor analysis with Ecosys EPC. After completion of this project I was assigned to the MassDOT project (Massachusetts Department of Transportation). I have been working with Mr. Lokesh, the onsite Business Analyst, since then in this project. My task has been specified to gather client feed backs, prepare task descriptions for the development team, prepare the mock ups to be included in the product build for the customer and testing the functionalities.

Tools used (Development tools - H/w, S/w): Aurigo Masterworks, MS Excel, Microsoft TFS, microsoft Sharepoint.

Objectives of the project: To prepare BRD on ADA Compliance.

To prepare BRD on competitive analysis of Ecosys EPC and Aurigo Masterworks.

To deliver the product in sprints to match with client's requirements.

Outcomes of the project: The BRDs were reviewed by my mentor and the product team. After which some suggestions were implemented in the build.

The MassDOT project has completed its 5 sprints and is into its 6th sprint. The client has been satisfied with the customization made to match their business needs.

Major Learning Outcomes: Learning the skill of capturing and processing client feed backs to be implemented as a feature in the software product.

Learning the deep skills related to MS Excel.

Brief Description of working environment, expectations from the company: The working environment is very exciting in the company. The company has been divided into two major divisions, product team

and the business team. The product team deals with the task of developing out of the box features while the business team deals with matching the expectations of the clients. The business team is again divided into sub teams. Each sub team dedicated to each customer (majorly DOTs). Teams are composed of Project Manager(s), Business Analyst(s), Software Developers and Software Testers. The company expects the employee or intern to be eager to learn new concepts and work with full motivation on them. Good communication skills are also a boost to have in this organisation so as to have an effective communication with the clients (majorly USA's DOTs).

Name: Devansh Mahajan (2013A2PS476P)

Student Write-up

Short Summary of work done during PS-II: The company calls out interns from Civil stream to work in the Business Analyst department. The role of a Business Analyst, in brief, is to understand the requirements of the customer making use of domain (civil engg.) knowledge and be able to convey the same to the development team effectively for implementation.

Tools used (Development tools - H/w, S/w): MS Office.

Objectives of the project: To understand the requirements of a client and be able to devise an implementation path.

Outcomes of the project: Understanding company's product and client's business process in great detail.

Major Learning Outcomes: Understanding how Business Process are mapped. Learning the role of a BA. Improvement in communication skills.

Brief Description of working environment, expectations from the company: Need to have decent communication skills. Should be able to learn the company's product in detail quickly.

PS-II Station: Blue Jeans Network India Pvt. Ltd. , Bangalore

Student

Name: Karthika (2013A7PS202G)

Student Write-up

Short Summary of work done during PS-II: Sdk for attendee experience Prime Time.

Tools used (Development tools - H/w, S/w): React, Typescript.

Objectives of the project: Unit testing.

Outcomes of the project: Embeddable player.

Major Learning Outcomes: Typescript react.

Brief Description of working environment, expectations from the company: Complete project on time.

Name: Siddharth Mohan (2013A7PS276G)

Student Write-up

Short Summary of work done during PS-II: iOS and Windows App Development. Worked on Blue Jeans's latest product Huddle and helped developed features in both the iOS app for the iPad as well as the Windows app. Fixed bugs and worked on a few Proof of Concepts (POC).

Tools used (Development tools - H/w, S/w): Swift3, C#, SumoLogic, AWS, EWS.

Objectives of the project: To help develop features and fix bugs related to the application.

Outcomes of the project: Involved in 3 successful releases of the application.

Major Learning Outcomes: Swift and C# as languages. Writing clean and efficient code. Removing code redundancy.

Brief Description of working environment, expectations from the company: Flexible work timings. Friendly people who are willing to help. Good food in aplenty. A good learning curve.

Name: Aditya Rungta (2013A7PS069G)

Student Write-up

Short Summary of work done during PS-II: My project was to develop a web application which fetches the performance data of all the deployed services from a third party. After receiving the data,I had to analyze it and send an alert to the developer if there is an anomaly in performance. Also,I had to plot graphs from the data that I received for each transaction. I made use of javascript to create the webapp and mongoDB for storing data. Apart from this, I worked on some short tasks where I had to fix an API or create an API to fulfill a requirement.

Tools used (Development tools - H/w, S/w): MongoDB, Mysql, RabbitMQ.

Objectives of the project: To notify the developer whenever there is an anomaly in performance

Outcomes of the project: The developer is notified whenever there is an anomaly.

Major Learning Outcomes: Learned to use JavaScript, Mongo, RabbitMQ.

Brief Description of working environment, expectations from the company: The working environment is really good.The working hours are flexible.You can come and go whenever you want as long as you are completing the assigned work. They expect you to complete the assigned work before the deadline.

Name: Amit Patil (2013A7PS660G)

Student Write-up

Short Summary of work done during PS-II: Feature development for the web meeting client team which is responsible for the inmeeting experience.

Tools used (Development tools - H/w, S/w): Javascript, HTML, LESS.

Objectives of the project: Adding new features to the inmeeting experience & improving its accessibility.

Outcomes of the project: Objectives were achieved.

Major Learning Outcomes: Front end engineering, better debugging skills.

Brief Description of working environment, expectations from the company: Relaxed working environment is the best way to sum up life at blue jeans. Upper management is very approachable and takes all inputs seriously. Interns are treated on par with full time employees. Most interns work on production code bases and there are no strict deadlines.

PS-II Station: Browntape Technologies Pvt. Ltd., Porvorim

Student

Name: Simarpreet Luthra (2013A8PS441G)

Student Write-up

Short Summary of work done during PS-II: 1. Sales Analysis

2. E-commerce category research

3. Data scraping

4. Remittance Reconciliation

Tools used (Development tools - H/w, S/w): MS Excel

MS PowerPoint

Data Miner

Web Scrapper

Objectives of the project: To analyze sales data to figure out flaws

To generate research reports for sub categories among leading brands

Outcomes of the project: Increase in sales

Major Learning Outcomes: New tools learnt

Development in professional spirit

Exploration of new areas of business

Brief Description of working environment, expectations from the company: Work environment is good

No one puts much pressure. Company expectations are very high

Name: Shiva Sahu (2015H149289P)

Student Write-up

Short Summary of work done during PS-II: Account management is a dynamic work in which team has to keep a track on daily operation.

Tools used (Development tools - H/w, S/w): MS Excel.

Objectives of the project: To manage client daily operations and formulate strategies for their continuous growth through competitor analysis and promotions on different marketplaces.

Outcomes of the project: Managed 9 clients over all major marketplaces.

Major Learning Outcomes: Time management, Multi tasking.

Brief Description of working environment, expectations from the company: Working environment twas good and supportive.

PS-II Station: Bundl Technologies Private Limited (Swiggy) , Bangalore

Student

Name: Sambhrant Dash (2013A1PS599H)

Student Write-up

Short Summary of work done during PS-II:

1. Increasing disposition accuracy.

2. Decreasing IGCC cost.

3. Sla+30 Analysis.

Tools used (Development tools - H/w, S/w): Excel, Qlikview, sql, Tableau.

Objectives of the project: 1. Increasing disposition accuracy.

2. Decreasing IGCC cost.

3. Sla+30 Analysis.

Outcomes of the project: 1. Increased disposition accuracy.

2. Decreased IGCC cost.

3. Sla+30 Analysis: Not impletemented yet.

Major Learning Outcomes: Business Analysis.

Brief Description of working environment, expectations from the company: 1. Flexible, Friendly environment.

Name: Rishu Garg (2012B1A1757G)

Student Write-up

Short Summary of work done during PS-II: Worked on late night delivery and expansion of area timings of 100 areas in 8 cities.

Tools used (Development tools - H/w, S/w): Qlikview, Tableau, SQl, Excel.

Objectives of the project: Increasing the order growth in late night segment which after 11:00 PM in 8 cities in india.

Outcomes of the project: Increased the operational timings of 88 areas and accomplished the 120% growth in orders after 11:00 PM.

Major Learning Outcomes: Team Management, Business Analytics and Project Management.

Brief Description of working environment, expectations from the company: learning curve is steep here, friendly and flexible.

PS-II Station: Centre for Artificial Intelligence & Robotics, Bangalore

Faculty

Name: Mohammad Saleem. J

Comments: I express true gratitude for the contributions made by the students and an understanding that these contributions were critical and exclusive to each individual. Industry mentors had wonderful capacity and the opportunities they gave to our students, helped to build strength and character. I asked students to be proactive in thinking before performance issues develop, I would like to put on record that because of hard work and inter personal skills and efforts that students have put in to make the project to a great success.

Appreciate the great organizations, where general willingness to learn did not go unnoticed. I want to take a moment to share an incident, where the student were asked to develop the features that are critical to the customers. They didn't disappointed; they understood highly complex innovations in very short span of time and delivered good quality code. Great Job, it means you've made a difference.

Student

Name: Karthik Vickraman (2012B1A4727H)

Student Write-up

Short Summary of work done during PS-II: Our project was based on the trajectory tracking of an autonomous 4 wheeled vehicle indigenous developed by DRDO. Using fundamental vehicle dynamics, we derived governing equations that determined basic vehicle behaviour, using modified assumptions and parameters appropriate to the specifications of the vehicle developed by DRDO. Furthermore, we developed a closed-loop control system on MATLAB & Simulink to simulate the motion of the vehicle on predefined manoeuvres. Different models were developed and compared (Single Track Model and Double Track Model, Neutral Steer Model and Over Steer Model) with existing experimental data of the same vehicle. As the vehicle developed by DRDO shows a non-uniform distribution of weight between the left and right sides and, thus, unlike regular vehicles that traverse similar turns in both left and right directions, the DRDO vehicle takes sharper turns on the side on which more weight is concentrated. This behaviour is captured in the model and system we have developed.

Tools used (Development tools - H/w, S/w): MATLAB & Simulink, Adams Car.

Objectives of the project: To develop a control system that accurately predicts that path followed by an autonomous vehicle indigenous developed by DRDO for a given manoeuvre.

Details of papers/patents: To be submitted to an IEEE conference (CCUBE 2017, Bangalore).

Outcomes of the project: A trajectory tracking model based on the double track method was developed to simulate vehicles with non-uniform weight distributions as shown by the vehicle developed by DRDO.

Major Learning Outcomes: Understanding the fundamentals of vehicle dynamics and the governing equations that determine the motion of a vehicle. Understanding of basic closed and open loop control systems and their implementation on MATLAB & Simulink.

Brief Description of working environment, expectations from the company: There is little practical work involved in the project, with most of the work involving simulations on MATLAB & Simulink. Each intern is provided with an individual computer in the air-conditioned CAIR Trainee room. Mobiles are not allowed inside the premises and there is no internet access except at the internet room. There are

no weekly targets or goals expected by the organisation. The pace of the project is determined by regular interactions with the mentor at CAIR. In case you are unfamiliar with a subject or software, the mentors provide both resources and time to study the same.

Name: Sonitabh Yadav (2012B5A4477H)

Student Write-up

Short Summary of work done during PS-II: Worked on simulation of the walking gait of an entirely hydraulically actuated quadruped robot.

Tools used (Development tools - H/w, S/w): Adams, matlab, solidworks, maple, Adams matlab cosimulation.

Objectives of the project: Development of walking gait of a hydraulic quadruped.

Outcomes of the project: Complete.

Major Learning Outcomes: Robotics, simulation, software.

Brief Description of working environment, expectations from the company: Excellent timings, free to set your own pace, excellent place for learning.

Name: Anish Srinivas Vasan (2012B1A4761P)

Student Write-up

Short Summary of work done during PS-II: Worked on multibody-dynamics, simulations, and control systems.

Tools used (Development tools - H/w, S/w): ADAMS, MATLAB, SolidWorks.

Objectives of the project: Develop a simulation and control system for gait of a hydraulic powered quadruped robot.

Outcomes of the project: A simulation and control system for gait of a hydraulic powered quadruped robot.

Major Learning Outcomes: Robotics, Control Systems, Multi-body dynamics.

Brief Description of working environment, expectations from the company: Restricted working environment due to many security constraints. Need to be highly self motivated as push from mentors is minimal.

PS-II Station: Cisco Systems (India) Pvt. Ltd - Machine Learning , Bangalore

Faculty

Name: Vineet Garg

Comments: Students at Cisco Systems worked on a variety of projects in the area of routers, switches, in-house tool development, process improvement and program management (MBA students). Knowledge in C/C++/Java/Python, domain knowledge in Networking and web development is useful for companies like Cisco Systems.

Student

Name: Kunal Rajeshbhai Mehta (2015H11270P)

Student Write-up

Short Summary of work done during PS-II: The project primarily focused on automating the unit test cases of router software components by using cisco's proprietary testing framework pyats which is python based and automation was done by using fireX an automation framework based on celery.

Tools used (Development tools - H/w, S/w): (H/w) NCS-4K router,(S/W) pyats, fireX, VM(Redhat Environment).

Objectives of the project: Unit Test individual components of router both hardware as well as software

Outcomes of the project: Measure how robust and reliable router can be in terms of number of test cases passed and failed and help developers to debug software components which got faulty during testing.

Major Learning Outcomes: Learnt deeply about Cisco's Router Architecture and also about automation of unit tests in production environment.

Brief Description of working environment, expectations from the company: Cisco environment is very cool in terms of people who works here and the work culture is fantastic. When I joined cisco I had no idea about cisco routers internal functioning but employees at cisco helped me lot in understanding important concepts used in building router and also good work life balance but not true for every departments. Overall quite satisfied with cisco's work culture and professionalism of people who work at cisco. Company expects you to provide solutions that helps in solving problems not only at small scale but also at large scale and also expects originality of ideas.

Name: Rahul Hatte (2015H124028H)

Student Write-up

Short Summary of work done during PS-II: The following project is about simulating test cases on SANet of Cisco Systems, Inc. We have to simulate the test cases in the Internetworking Operating System (IOS) of Cisco Systems, Inc. We first run the SANet on the Operating System which is in the Virtual Machine (VM) provided by Cisco Systems, Inc. Then we have to build the test cases. Then we have to run the SANet on the VM and apply test cases that we have built earlier. We then run these test cases on the actual switches and routers of Cisco Systems, Inc.

Tools used (Development tools - H/w, S/w): VNC viewer, putty.

Objectives of the project: To check whether a program or some functions are working correctly, we test them. Testing can be done manually and even better, they can be automated. In our project, we try to automate the test by automating the test cases. To do so, we write scripts in order to automate them.

The tests are then run on functions which represent how an actual switch works. After running the tests we come to know whether the switches or routers work or not. We run the tests on an operating system called Internetworking Operating System (IOS).

Outcomes of the project: We come to know how routers and switches actually work.

Major Learning Outcomes: Learnt to add a test case.

Booting images on some CISCO products.

Understanding Linux commands.

Brief Description of working environment, expectations from the company: Working environment is good and they expect the work to be completed before the deadline.

Name: Keerthi Chavan (2015H140028G)

Student Write-up

Short Summary of work done during PS-II:

1. Developed a web based tool to display and control the routers in the lab.

2. Developed a module which is used to display the router information and the ability to turn on, off and reboot the device using the tool.

3. Developed a web based tool to display the different customer configuration and features.

Tools used (Development tools - H/w, S/w): Python, PHP, HTML, Ajax, Javascript, Basics of networking

Objectives of the project: Provide user the router information and the ability to control the routers in the lab.

Provide user number of free router console and its details.

Provide user to turn on or off or reboot the device using the tool instead of doing it manually.

Provide user with different customer information and features.

Outcomes of the project: Completed within the time period, got a lot of updates and issues from customers end and fixed them all.

Major Learning Outcomes: The tools used Python for back-end process and PHP, HTML, Ajax, Javascript for front-end process.

Brief Description of working environment, expectations from the company: The working environment is good. Knowledge with respect to developing tools, scripting language, basics of networking is expected from the company. All the team members are very helpful and are always ready to solve any kind of issues faced. Mentor and Manager are very supportive and always try to give good work. Expectations from the company is to understand and know different scripting languages and web based languages. Company expects a quick-learner, smart thinker and a person with a go-getter attitude.

Name: Prateek Sharma (2015H112169P)

Student Write-up

Short Summary of work done during PS-II: Migrating a monolithic system to microservices architecture.

Tools used (Development tools - H/w, S/w): RabbitMQ, Eclipse, Java Proxy, servlets.

Objectives of the project: Making a system distributive.

Outcomes of the project: Distributive system.

Major Learning Outcomes: RabbitMQ, Microservice Architecture.

Brief Description of working environment, expectations from the company: Friendly working environment.

Name: Kunj Ashokbhai Shah (2015H140115P)

Student Write-up

Short Summary of work done during PS-II: I was part of core software group, (ENG unit at Cisco). We (team of four interns) have been assigned to integrate Cisco proprietary test framework to test possible use cases for CiscoTrustSec module. Basically CiscoTrustSec (CTS) is the product from Cisco which facilitate Role, Device and Location based Authentication and Authorization for Enterprise networks. Initial one month we had KT sessions to understand product features and to understand significance of each Hardware and Software module involved. Test framework was developed in LUA language. We explored features of test framework and sample examples from Cisco Internal Wiki. We had meetings with Tech Leads to track progress. Tech leads were very supportive here. Whenever we stuck in coding or design, one stop solution is contact tech lead and express your concern. One thing i like the most at Cisco is, you are the owner of work assigned to you. Which gives immense exposure to all phases of product life cycle starting from designing solution to write optimized for code for it. We developed test cases for MAC and DOT1X based authentication for wired networks which will help Developers to Unit test their modules.

Tools used (Development tools - H/w, S/w): C and LUA language, Wireshark for packet capture, Cat9k Switch.

Objectives of the project: I was part of Polaris feature development team, my team was working on one module which runs as process on Cisco switch OS. Basic functionality of this module is to provide Authentication, Authorization and Accounting services to end devices which connects to switch via Ethernet port into Enterprise networks. This feature is publicly known as Cisco Trusted Security (TrustSec). To improve the code quality and code coverage, Cisco decides to use proprietary test framework for Trustsec. Scope of the project includes use of proprietary test framework to validate and verify the Trustsec functionality. Test framework can be used to Unit test modules on Actual device or on virtual machine. Longterm objective of this project was to create test suite pool which includes all possible use cases, sanity and regressions tests for each subsystem so that code coverage can be increased to 80-90% and developers can Unit test their modules irrespective of dependencies on other sub systems.

Outcomes of the project: Intergartion of cisco proprietary test framework with CiscoTrustSec modules to improve code quality and coverage. Create test pool which includes usecases for all possible scenarios, sanity tests and regression test pack so that developers can reduce development time by working effectively on feature development instead of investing time on creation and execution of Unit test plan for their modules.

Major Learning Outcomes: Learning different types of authentication methods for Enterprise network. How Authentication, Authorization and Accounting achieved for End devices connect to Enterprise Network. How to configure Switch, its IP for particular network, policy creation and enforcement. FFI binding, LUA framework, Integration test suite and interaction between them.

Brief Description of working environment, expectations from the company: We have been assigned individual mentor who helped us to understand project features, how to avail Linux machines and lab access. Cisco doesn't follow any timing structure. You are expected to attend meetings and get your tasks completed before deadline. Work environment is very supportive and employees are truly humble, you can ask your concerns to your team member at anytime. Everyone has laptop here, so no need to work from desk only, you can sit in breakout area and complete your work. You as an individual has to design and implement solution for whatever feature assigned to you which is really good thing to learn and construct feasible approach for any bug/feature.

Name: Anamika Das (2014H313059H)

Student Write-up

Short Summary of work done during PS-II: I have worked on two major projects that involves front end and back end. Solved real time bugs and hands on Cisco's tools.

Tools used (Development tools - H/w, S/w): Eclipse, Cisco Work Space, development languages, Cisco Routers.

Objectives of the project: Development of two Tools:

1. Helpful to customer who uses ASR and NCS Routers.

2. Efficient submission of codes to test beds.

Outcomes of the project: Successful delivery of codes.

Major Learning Outcomes: Learnt web development, scripting, configuration on routers, Cisco's code base and tools that are useful for the employees.

Brief Description of working environment, expectations from the company: Work life balance is good. They expect to complete work on time. No restriction on in time and out time of office.

Name: Archit Saxena (2013A3PS246P)

Student Write-up

Short Summary of work done during PS-II: I had two projects over her. One was related to testing (developing test cases for already existing python files) and the other one to development (developing python handler for cli).

Tools used (Development tools - H/w, S/w): Python, C, C++, Pyats, LINUX.

Objectives of the project: Making cli function callable from python, helping create test cases for already existing py files.

Outcomes of the project: The project are successful and will be integrated to the code base of cisco.

Major Learning Outcomes: Testing, Software development, Linux, Big code base handling.

Brief Description of working environment, expectations from the company: The work environment is very good in Cisco. The people here are friendly. I would recommend it to all electronics engineers who want to start their career in IT. A lot of learning time is given to newcomers.

Name: Davinder Pal Singh (2013A3PS010P)

Student Write-up

Short Summary of work done during PS-II: I had done 2 projects. 1) Made some enhancements in Log Parser Tool (all work in Python) 2) In this I had to make trouble shooting Bot in Cisco Spark (In Spark messaging, calling, video all integrated in one platform, designed for enterprises) for different applications.

Tools used (Development tools - H/w, S/w): Python, Java, API.AI (for NLP), Netica (for Bayesian Networks), Cisco Spark API, New Relic, DNSjava, Elastic Search, Kibana, grafana.

Objectives of the project: Automation.

Outcomes of the project: Made trouble shooting bot for different applications and made log parser to support ATA log files and other enhancements.

Major Learning Outcomes: Learnt Machine Learning and different technologies

Brief Description of working environment, expectations from the company: Work culture of Cisco is very good. People are very helpful.

Name: Athira C K (2015h124025H)

Student Write-up

Short Summary of work done during PS-II: It was a full project. To implement PTP (Precision Time Protocol) for etherchannel.

Tools used (Development tools - H/w, S/w): Language: C.

Objectives of the project: Time synchronization between two device.

Outcomes of the project: Project completed with in the stipulated time.

Major Learning Outcomes: Networking, Protocols

Brief Description of working environment, expectations from the company: Work culture here is best in the industry. Chances of PPO depends on the vacancy available in the BU and also on the manager recommendations.

Name: Rajat (2015H140027G)

Student Write-up

Short Summary of work done during PS-II: Worked on hybrid mobile application development mainly concentrating on the ui part of it.

Tools used (Development tools - H/w, S/w): Android Studio, Ionic Creator, Unity 3d.

Objectives of the project: To develop a webview around a 3D model as a VR application.

Outcomes of the project: Finished almost 70% part of the project.

Major Learning Outcomes: Process of mobile application development.

Brief Description of working environment, expectations from the company: It was a nice time working in Cisco for almost 6 months, got to know how a big company functions and various processes involved during a major application development.

Name: Iyer Radhakrishnan Ramarathanam Vandana (2015H103021G)

Student Write-up

Short Summary of work done during PS-II:

1. Configuring system to use proprietary test automation tool.

2. Writing test scripts to automate test on files given.

3. Executing the test scripts to facilitate automation of tests, on Cisco switching and routing devices

Tools used (Development tools - H/w, S/w): C, Linux, Cisco proprietary test automation tool.

Objectives of the project: To automate the tests performed on given code via proprietary test automation tool.

Outcomes of the project: Successful configuration and automatic execution of the test scripts on the Cisco routing and switching products.

Major Learning Outcomes: Learning to configure the system, more usage of C and linux, writing and executing test suites on Host machine as well as on Cisco routing and switching products.

Brief Description of working environment, expectations from the company: Work environment - casual, no micromanagement. No unwanted interference from teammates, mentor or manager.

Helpful staff, facilities for recreation in office. Expectations: More development projects in which we have to build from scratch.

Name: Patel Neel Yogeshkumar (2015H103035H)

Student Write-up

Short Summary of work done during PS-II: My main work is to enable bluetooth on cisco switch and make a bluetooth managament interface using it. So for that I have to add all packages, drivers modules related to bluetooth and make it work on cisco IOS.

Tools used (Development tools - H/w, S/w): Linux, bluetooth, Cisco switch.

Objectives of the project: Make Bluetooth management interface using Bluetooth.

Outcomes of the project: Switches can be managed remotely.

Major Learning Outcomes: Linux, Bluetooth.

Brief Description of working environment, expectations from the company: Working culture is very good, work life balance is very good. We can able to work on latest technologies. Expectations: More development projects in which we have to build from scratch.

Name: Sai Chand (2015H149220P)

Student Write-up

Short Summary of work done during PS-II: Creating the executive dashboard for leadership team and helping the team build the next generation reporting tools and processes

Tools used (Development tools - H/w, S/w): Tableau, VBA, Excel.

Objectives of the project: Create a Dashboard for the executive team?

Creating the next generation reporting tools.

Outcomes of the project: New Executive dashboard for Leadership team Next Generation Reporting tools.

Major Learning Outcomes: New Software's and Programming languages. Reporting Process in Organization. Exposure to Analytics and Big Data.

Brief Description of working environment, expectations from the company: The work culture is good and open you will get to learn a lot of stuff. You will get to work on a lot of interesting and exciting stuff. The Intern program Cisco has gives you a lot of cross functional and global experience.

Name: Tarun Dhiraj (2015H103085P)

Student Write-up

Short Summary of work done during PS-II: Worked on the module which was responsible for communicating the data related to sender's reputation and its incoming mails and their status, to a central intelligence and repository that maintains a global knowledge about the IP of senders and their reputation score. The problem was that whenever email security appliance (ESA) participated in communicating such a data to the SenderBase, it showed some performance drop. My work involved looking into the code base and making appropriate changes to mitigate the performance drop. Also, there was another project where I had to write code to communicate with the newly inducted Classification Service on the Thread Grid. Thread grid is responsible for checking and reporting malicious files to the ESA. The new classification service will be intelligent enough to analysis the file and get its verdict without even executing it on various environment. Currently, the ESA is communicating with ThreatGrid directly. The need is to let ESA communicate with the CS.

Tools used (Development tools - H/w, S/w): H/W - Email Security Appliance.

S/W - vi, cscope, VMWare VSphere Client.

Objectives of the project: 1.To improve the performance of email security appliance when senderbase network participation is enabled.

2. To establish a connection between newly inducted classification service on threadgrid service with email security appliance.

Outcomes of the project:

1. There are various stages in the email pipeline where data is being collected for sharing it with SenderBase. Those data collecting methods take significant time in collecting those data which can't be removed from the module, hence there will always be performance drop when SBNP in enabled.

2. Done with understanding of the module where the logic has to be implemented to make the appropriate communication happen. But as the other team is still working to expose various URIs to connect with, the project has been delayed.

Major Learning Outcomes:

1. Better understanding of email architecture.

2. Working of email security appliance.

3. How Cisco is making the emails secure for its customers.

4. Communication with various teams.

5. How processes in production are automated.

Brief Description of working environment, expectations from the company: Working environment in Cisco is vary cool. You aren't required to work in a cubicle. There are various awesome places on each and every floor of nearly every building where you can relax as well as work. There are nap rooms where you can take a nap if you are feeling tired. The people here are very much experienced and know their stuffs right. We as an intern where involved in various team outings as well. We even had an outing especially planned for interns. If you are joining Cisco as your PS, then expect to have a loads of fun as well as work on cool products that are securing billions of lives.

Name: Pradyumna Paralikar (2015H103034H)

Student Write-up

Short Summary of work done during PS-II: The aim of the project was to integrate Enhanced Threat Telemetry Analysis (ETTA) with Cisco Web security appliance (WSA). ETTA is opensource project, It is

added to WSA as a reporting module. It can detect malware in given sequence of packets. Task started from building ETTA on freebsd as it was meant for linux and mac distribution then integrate it with various WSA logging module and log subscription. A python wrapper code is written for health monitoring, configuring and standard output logs of ETTA. Command line interface is added for configuring ETTA process. Also, wrote few automation scripts for testing purpose. Elastic search, kibana and logstaths is used at the end for visualization purpose. Created a engineering build for the integration for release and licensing purpose.

Objectives of the project: There are various web security tools are available for malware analysis and all these tools decrypt traffic while analyzing it and this behavior may not preserve the integrity of a connection. The goal of ETTA is to provide better threat detection and forensics for customers, even in the presence of encrypted traffic streams and to overcome the overhead of decryption, and maintain end-to-end encryption. ETTA – Joy package predicts possibility of packet being malware by using machine learning techniques. It also determines whether a traffic is encrypted or not using byte entropy calculation. Hence the integration of ETTA with WSA will improve overall performance and also it can be included in reporting module for admin viewing purpose.

Outcomes of the project: ETTA feature is added to WSA. Engineering build for WSA-ETTA integration is created with all the dependencies.

Major Learning Outcomes: Working of web security appliance, modularizing of code for loose coupling, Machine learning involved (logistic regression), Automated scripts, Version controlling (perforce).

Brief Description of working environment, expectations from the company: Work culture in Cisco content security group is very friendly, Here all the people are knowledgeable, learning curve is very good. Work life balance is there and ideas are always respected and innovation is promoted. Frequent team outings are there for socializing.

Name: Nirav Rana (2015H103087P)

Student Write-up

Short Summary of work done during PS-II: Packet Drop Auto Triaging: Packet drop auto triaging is simply identifying the reason behind packet drop. There are already available output chains from router which has enough information to deduce the reason behind packet drop in most cases. This can be done by verifying the output chain with predefined conditions. My task is to automating this and at least cover basic cases would which will save a lot of time against when done manually. This task includes parsing the output to parameters and then verify it by comparing these parameters according to predefined conditions.

Tools used (Development tools - H/w, S/w): Python (Pexpect & Parse) and Router through CLI.

Objectives of the project: Packet Drop Auto Triaging: Packet drop auto triaging is simply identifying the reason behind packet drop.

Outcomes of the project: Manually doing this task was tedious and time consuming thus automating it saved a lot of time and manual effort.

Major Learning Outcomes: 1. Architecture of Routing infrastructure 2. Automating CLI tasks and its monitoring

Brief Description of working environment, expectations from the company: Working environment at Cisco is little formal which is required at such large company and mostly informal. You are free manage you time as you want, unless you are doing you work properly and reporting to meetings and discussions when required. Managers and mentors are very friendly and will help you out whenever you need. There was a bit of confusions in some departments initially on what work should be given to interns but with time it gets sorted. There is good work life balance and more than enough facilities to spend your leisure time.

Name: Garima Singh Sambyal (2015H124027H)

Student Write-up

Short Summary of work done during PS-II: Created a framework, based on REST APIs, that automates the functionality of the Firepower Management Centre.

Objectives of the project: The project aimed to automate the functions of the FirePower Management centre, which included creation of Access Policies, creation of Access Rules, then the deployment of the Firepower Threat Defence centre, its configurations, the traffic flow through the device and the validation of the same.

Outcomes of the project: The framework successfully performs all the functionality at a much less time than that taken by GUI. This also reduces the probability of error, giving if any issue at a much earlier stage.

Major Learning Outcomes: Learnt about the Firewalls, Firepower Threat Defence device, Firepower Management Centre and other network security appliances.

Brief Description of working environment, expectations from the company: working environment was good.

Name: Sahil Kukreja (2014H313063H)

Student Write-up

Short Summary of work done during PS-II: I joined here as a Software Engineer - Grad. Intern. With Content Security team which is a part of Security Business Group (SBG). Worked closely with the existing automation team - which was working on one of the appliances called ESA owned by Cisco. The job was to automate the process for the validation of engine (one of the component - many 3rd party vendors) - so a sound knowledge of automation, scripting languages and picking right set of tools & packages for it. Also with that, since it was a group project helped in the development of the Web Dashboard to display the result of automation process.

Tools used (Development tools - H/w, S/w): Python, FreeBSD based Virtual ESA (Email Security Appliance), HTML5, CSS, JS, DjangoDB, S3, AWS Cloud.

Objectives of the project: To automate the engine validation project which is currently been done manually to save the human intervention and time. And finally making it one click accessible for the

higher management/ authority to see the published results and raise tickets to publish it for general audience/clients.

Outcomes of the project: A Deliverable product whose scope can further be increased to more such products as well (more vendors's engines or components - like signature/rules) and hence can save the effort required for validating them manually.

Major Learning Outcomes: Automation, Software Dev. LifeCycle (SDLC), OOPs, WebDevelopment, Content & Web Security.

Brief Description of working environment, expectations from the company: Work environment is superb here, mentors are really helpful and tech. lead and manager can be approached directly. Great opportunity to actually learn and progress with the comfortable pace. Regular sync ups with mentor and tech. lead. Makes you feel you are part of an emerging and real time project. The best part is Cisco Learning & Development - where you can enroll in to courses and training programs just like any other full time employee. This can be very helpful if you want to learn while working. All I can say is: Wonderful corporate exposure.

Name: Aishwarya Pendyala (2013A7PS189H)

Student Write-up

Short Summary of work done during PS-II: I have been involved with the Business Analytics and Business Intelligence team. My work consisted of automating their tools and developing a dash board on tableau based on various metrics for their business purposes.

Tools used (Development tools - H/w, S/w): Tableau, R.

Objectives of the project: Better utilization of human power by automating weekly reports.

Outcomes of the project: We have developed applications in R for the team's reports.

Major Learning Outcomes: I have got good hands on experience in R.

Brief Description of working environment, expectations from the company: The working environment of the company is very friendly and also very helpful.

Name: Deboleen Roychowdhury (2015H112172P)

Student Write-up

Short Summary of work done during PS-II: Was involved in UT Automation of dot1x protocol for Macsec which involved writing the UT for the dot1x component of Macsec and test it on various platforms.

The second project involved adding a new cli option to support gRPC so that third party applications can use the management plane protection (mpp) infra for protection. For this,we added a new cli option and made sure that it interacts with the necessary backend modules for proper functioning,tested on sunstone,wrote UT automation scripts and also XML testing.

Tools used (Development tools - H/w, S/w): Rosco box, Sunstone and Panini simulations, Python, XR programming.

Objectives of the project: The objective of the gRPC project is to add additional security while allowing third party applications to be hosted. For this the existing CLI had to be changed.

Outcomes of the project: The UT automation for dot1x had been successfully written and committed.

The code for gRPC is out for peer review and will be committed soon.

Major Learning Outcomes: Having been in security team, a very detailed view of the various components of routers and their interaction on a very lower level is given. Learning the details of XR OS and programming in XR has been fun and it further helped in understanding the working of various components better.

Also being a part of the PI (platform independent) team, we got to work on different platforms to make us feel more comfortable writing python scripts which are generic in nature and not platform specific.

Brief Description of working environment, expectations from the company: The team members were quite helpful when it came to clearing doubts. The work environment is professional and friendly at the same time.

Name: Neeraj Singhi (2015H103033H)

Student Write-up

Short Summary of work done during PS-II: Work on IoT based protocols like CoAP and CBOR. Learnt how switches and Iot works.

Tools used (Development tools - H/w, S/w): Switch, C, VMware.

Objectives of the project: Create IoT Client to communicate with the switch.

Outcomes of the project: Send some Packets with MUD URI and Worked on CoAP Observe and CoAP Group Communication.

Major Learning Outcomes: How CoAP and LLDP work and how to send different network packets.

Brief Description of working environment, expectations from the company: Friendly work environment and everyone is ready to help if you are stuck somewhere.

Name: JAYESHKUMAR PATEL (2015H140124P)

Student Write-up

Short Summary of work done during PS-II: In initial stage of internship, task was given to understand about structure of eWLC (WLAN controller) and how FSM (Finite state machine) of different module of eWLC is working. Then, one particular library was decoupled to remove dependency on that library. Test cases were written to check functionality of different module of eWLC and coverage report was generated to check how many module and their function it was covering.

Tools used (Development tools - H/w, S/w): S/W - C language, Lua Script for testing and Wireshark to analyse packet.

Objectives of the project: An integrated framework for Polaris processes is developed that will greatly enhance the rapid development and unit testing with performance and is more efficient. As a way of ameliorating testability of eWLC, mock infrastructure is built using SWIFT. This framework should allow a test to mimic an external function and have it return different values. Mock functions are written to perform unit testing of the wireless functionalities and obtain code coverage.

Outcomes of the project: Test cases are generated to check functionality of different module in eWLC. These results were assessed qualitatively and a code coverage report is generated.

Major Learning Outcomes: Learning of c language in depth and how testing is done using scripting language using Lua script in Linux environment. Knowledge of SWIFT automation framework.

Brief Description of working environment, expectations from the company: Work culture is good here. My mentor and manager were always helpful whenever i went to them with doubts. They always guided me in correct direction and they always made sure that i learnt a new thing in each stage of my internship.

Name: Gajendar Pandey (2015H103037H)

Student Write-up

Short Summary of work done during PS-II: Currently, Web Security Appliance (WSA) which are available in the market detects malware from encrytped traffic pattern by decrypting it. Enhanced Telemetry Threat Analysis (ETTA) uses machine learning techniques to classify traffic as malware or benign without decrypting it. Thus, it avoids decryption overhead and maintains end to end integrity. ETTA is integrated with WSA as a scanner like process with scans traffic on any interface and port and output its verdicts. These verdicts are reported to administrator. ETTA logs are integrated to WSA logging module to supports rollover based on time, size etc. Further, these logs can be transfered to a remote server for reporting purpose. Reports are generated using Elasticsearch, Logstash and Kibana (ELK) which can show

clients which have high chances of getting infected, servers which have high probability of serving malware, clients using weak ciphersuites etc. Admin can generate necessary access policies (monitor or block) by looking at these reports and enterprise requirements.

Tools used (Development tools - H/w, S/w): Web Security Appliances, Python, C, ELK.

Objectives of the project: The main objective is to secure web by detecting malware in encrypted traffic without decrypting it. Thus, it avoids the overhead of decryption and also does not violates end to end integrity policy.

Outcomes of the project: ETTA is integrated with Web Security Appliance (WSA) as a scanner like process which predicts malware in an encrypted traffic pattern and reports to administrator for necessary access policy generation.

Major Learning Outcomes: Working of web security appliance like logging module, health monitor, CLI modules and Web Proxy. Architecture of scanners, using machine learning techniques to predict the probability of malware in a flow. Reporting in Elasticsearch, Logstash and Kibana (ELK).

Brief Description of working environment, expectations from the company: Cisco is a great place to work. You get to work on latest core and challenging technologies. Managers are very supportive and helpful. Apart from work, you get to participate in various cultural and techincal events happening all year round. You will learn to work in team and give your contribution to the project.

Name: Sohil Ladhani (2015H103038H)

Student Write-up

Short Summary of work done during PS-II: I worked as a Software Engineering Intern in CSG (Core Software Group) PI (Platform Independence) division. I was given responsibility to explore a unit testing framework which is used to perform white-box testing on Cisco's Catalyst 3850 series (Edison) switch platform. The department being new to ins and outs of the framework, expected us to go through the intricate details of how the framework works and provide a demonstration of the same.

Tools used (Development tools - H/w, S/w): I used Cisco's Catalyst Edison switch to run my test cases. We had to use Lua scripting language to prepare the test cases. The modules of the test cases used to call C APIs via FFI (Foreign Function Interface).

Objectives of the project: The prime objective of my project was to perform white-box testing of the switch platform's session management feature. To achieve that, I had to learn and explore Cisco's next generation state-of-the-art unit testing framework. With the help of this framework, one could write test cases of individual modules that make up the operating system of the switch. The test cases are written in Lua scripts which in turn call already established C APIs with the help of FFI. This main objective was further divided into two sub-objectives. First task was to capture the database modification calls and convert them to well-formed XML on the hardware. Once the XML is captured, it is parsed to mimic the functionalities and behavior of the hardware in a simulated environment, again provided by the unit testing framework. Second task was to use this simulated environment to create test-cases for individual modules of the operating system. These test cases can help to test functionalities without actually running on the hardware.

Outcomes of the project: I was able to capture and replay the database calls to the functionality of a switch on a Linux system. This helped me scenario based test cases like creating an EAP (Extensible Authentication Protocol) session between the components of a network.

Major Learning Outcomes: I learned a lot during these amazing 5.5 months. Apart from my technical skills and domain knowledge, I got an opportunity to improve my communication skills. I learned how to work in a team and contribute to the same. I got to apply all I knew about networking and programming during this time period. I got to learn a completely new scripting language called Lua.

Brief Description of working environment, expectations from the company: Cisco is a perfect company for those who pines for a work-life balance. Apart from knowledgeable and always helpful mentors, Cisco has a beautiful environment which reflects its values. The thing about Cisco which I completely adore is the flexibility. You can choose a different career path within Cisco if you have what it takes. I would definitely recommend Cisco as a PS station. I would even recommend Cisco to apply for a full-time position. That is a decision, I think, one would never regret.

Name: Arpit Srivastava (2015H103076P)

Student Write-up

Short Summary of work done during PS-II: NxOS is the OS of the NxK series of switches by CISCO targeted toward the data-center. Third party code is used for NTP, which is a protocol to keep servers in synchronization. Being the third party code it was not build using the infrastructure of the NxOS. Hence it was build separately for all the supported platforms and shipped with the OS image.

NTP had lot of build issues and large number of steps to be build manually. For a manual build it required a time of a day to have a complete build for all platforms. I made the automation script and the whole process was automated and the build time was reduced to 45 mins.

Tools used (Development tools - H/w, S/w): python, make.

Objectives of the project: Automate the NTP build Process for NxOS.

Outcomes of the project: Delivered the automation scripts documentation as required.

Major Learning Outcomes: Usage of Pexpect.

Brief Description of working environment, expectations from the company: Working environment in CISCO is quite chilled out (mostly dependent on your manager). Campus is awesome, lot of recreational activities. As an intern you are not much pressurized to work or follow strict deadlines. Less number of team outing. Most of the core development of CISCO is in C, so anyone would be lucky to get rid of old tech easily.

Name: Shubham Manhas (2015H140122P)

Student Write-up

Short Summary of work done during PS-II: My work at Cisco was integration of a Test Framework for Enterprise Network platform features. The main focus was basic integration of the framework and running test cases for different scenarios in the new test framework. The work involved understanding

of the existing modules in the code and writing test cases that cover these modules. For this basic understanding of networking concepts was required.

Objectives of the project: Main objective was complete integration of a new test framework in the existing platform. Next objective was to write test cases that run in the new framework.

Outcomes of the project: Successful implementation of the above objectives that was instrumental in testing the existing modules of the code in a new way.

Major Learning Outcomes: Understanding of C language, LUA scripting language, Operating System concepts, Networking Basics.

Brief Description of working environment, expectations from the company: The working environment of Cisco is employee friendly, positive, and enthusiastic. The team members are very helpful and are always available for guidance. The management is also friendly, and there is no feeling of superiority.

Name: Ankur Gupta (2015H103036H)

Student Write-up

Short Summary of work done during PS-II: I worked on Emergency Lighting project. This project intended to provide a power solution in case of power failure and when building goes on UPS Battery.

Tools used (Development tools - H/w, S/w): C, CDB-Selecon, 3850, Python, SNMP

Objectives of the project: To provide Emergency Lighting solution.

Outcomes of the project: Done. Possibly will release in near future.

Major Learning Outcomes: Persistence. Other than that learned quite a lot about networking and Cisco Digital Building establishment.

Brief Description of working environment, expectations from the company: It was all fine. I was provided a cubicle.

Name: Satya Narayanan (2015H149248P)

Student Write-up

Short Summary of work done during PS-II: I had the good fortune of undergoing my practice school program with Cisco as a project management intern under the Cisco Services function in the Project Management Team. The Project Management team is a centralized pool of project managers in Cisco who are responsible for the delivery of projects and provide exceptional value to various customers. These services portfolio includes networking, security, IoT solutions among others. Regarding my responsibilities, I was managing two projects with a senior project manager providing networking and IoT services to customers and was involved in planning, executing, monitoring, controlling and closing of the project. This involved proactively engaging with clients, partners and internal stakeholders, managing project scope, schedule and costs and managing resources such as solution architects/network engineers for successful project completion. Apart from that, I was also involved in internal activities such as creating a tracker for the project management team which acts as a repository on the projects delivered as well as being delivered as well as was part of various training sessions on domains like IoT, Wireless and others. Surely, this practice school provided a great learning curve personally and professionally.

Tools used (Development tools - H/w, S/w): Oracle Project, Primavera P6, Tableau, Microsoft Excel, Internal Cisco project management tools.

Objectives of the project: Project management of fixed price engagements and project management support activities.

Outcomes of the project: Successfully managed assigned fixed price projects.

Completed 150+ project management support activities for senior PMs.

Major Learning Outcomes: Got exposure to apply project management processes to real projects Trained on various project management tools Got exposure to various technologies such as Wireless, IoT, software Defined Networking.

Brief Description of working environment, expectations from the company: The working environment is quite smooth in project management team in Cisco. It definitely demands focus and good interpersonal skills from its employees and interns alike. My expectations from the company was to get

a platform wherein I can apply my learning in college to real live projects as well as get to learn new skills and tools and both these expectations were fulfilled in this internship.

Name: Sudhir Mishra (2015H149248P)

Student Write-up

Short Summary of work done during PS-II: Worked on performance improvement of Email Security Product.

Tools used (Development tools - H/w, S/w): vi, cscope.

Objectives of the project: Troubleshoot a performance issue with Email Security Product.

Outcomes of the project: Narrowed down the reasons for performance drops by eliminating variable components.

Major Learning Outcomes: Team work, E-mail architecture.

Brief Description of working environment, expectations from the company: Helpful mentors and colleagues.

Name: Dharmil Shah (2013A3PS329P)

Student Write-up

Short Summary of work done during PS-II: The aim of the project was to carry out network traffic prediction. Assuming data usage in an academic institution, I had to generate network usage data and carry out computations on the generated data to predict various network parameters. I used python and its packages (scikit-learn, matplotlib, etc) to facilitate the computations as well visualise the obtained results.

Tools used (Development tools - H/w, S/w): Python, its packages.

Objectives of the project: Network Traffic Prediction.

Outcomes of the project: Prediction about the clients connected and various other network statistics.

Major Learning Outcomes: Machine learning, Python Proficiency.

Brief Description of working environment, expectations from the company: Working at Cisco has been an amazing experience. Interning at a company which is a market leader in networking was a great learning expedition for me. Cisco is a global company and with several cross-functional teams. It is a perfect blend of management and technical and thus gives several opportunities to learn various skillsets. I was a part of the Core Software group (CSG) - wireless in the Engineering department. As a part of the team working on the 802.11 protocols, my task was to carry out network traffic prediction. The internship allowed me to further explore and implement the concepts I've learned in my classroom, thus fulfilling my Academic learning objectives

I got to interact with Director and various other senior managers who gave me career advice which will definitely be helpful in my long term career. These 5 months of PS at Cisco Systems has given me a smooth transition from academia to industry.

Name: Rahul Jain (2015H140049H)

Student Write-up

Short Summary of work done during PS-II: I was lucky for getting a chance to work in Security BU in Cisco. I had two main milestone to achieve as part of my internship process, first was to write a wrapper on top of the existing code layer inorder to access all the Remote Procedure calls. This was supposed to be done in Java, and as i was very new to Java, i really got a chance to learn a lot. On the other hand i had to build a UI widget in ReactJS. This java script is very new in the market, so was very excited when i gotta a chance. I also wrote backend code to populate required things in the widget. Apart from the work, people around Cisco are really helpful, work culture is good, and most of all people here are not

bothered if you come to office or not, what really matters to them is Work. Overall i would recommend students to join Cisco.

Tools used (Development tools - H/w, S/w): Java.

Objectives of the project: Develop UI widget using ReactJS and develop wrapper to access RPC calls

Outcomes of the project: I could successfully complete it.

Major Learning Outcomes: Learnt Java.

Brief Description of working environment, expectations from the company: Environment is very good, nice Work Culture and employees here are very helpful.

Name: Jishan Baig (2015H103089P)

Student Write-up

Short Summary of work done during PS-II: My work was mainly based on retrieving the required information from unstructured objects. My goal was to analyze the unstructured data and develop a command line tool to extract the required information from the unstructured data store. In my project, graph visualization was also involved to visualize the dependencies among the unstructured objects. All the project development phases design, coding, testing were involved in developing the solution to handle complex unstructured objects. All the project development phases design, coding, testing were involved in order to get the required outcome.

Tools used (Development tools - H/w, S/w): perl programming, graphviz, graph databases e.g. neo4j.

Objectives of the project: My project objective was to resolve referential integrity issues from the unstructured data store. To check all the dependencies among various objects, I developed a tool with all sort of referential analysis capabilities to maintain the integrity of the data.

Outcomes of the project: I developed a command line tool to perform referential analysis among the unstructured data objects in the data store. The tool provides basic commands to handle all kinds of referential integrity issues including removing the dangling references from unstructured objects.

Major Learning Outcomes: It was the first time for me to work on Perl programming. I learned Perl programming from basic to advance. I worked on Cisco security product. It took some time to understand the code base, then it became easy to use already existing APIs. During the project, I learned about many code optimization techniques. To visualize the dependencies, I used Graphviz Perl library and neo4j graph database.

Brief Description of working environment, expectations from the company: The working environment is very friendly in Cisco. My mentor gave enough time to understand the codebase and development tools they use. He cleared all my doubts during the course of the internship. The main focus was on learning. I interacted with many people to understand the existing codebase. Many series of discussions lead me to get my project done successfully. Cisco is networking based company, but I got the work related to unstructured data. It is not necessary that if you choose Cisco, you will be working in the networking field.

Name: AASTHA AGRRAWAL (2012B2A3780P)

Student Write-up

Short Summary of work done during PS-II: I learnt in depth about Django framework, how to work on an end-to-end platform. I developed a lot of applications and functionalities on the operational portal. I was also asked to build an NLP parser for the same portal.

Tools used (Development tools - H/w, S/w): UCS C series M240, CentOS, Python, NLTK library, MySQL.

Objectives of the project: Build a business internal platform for better team utilization and monitoring purposes.

Outcomes of the project: A operational excellence portal which allows efficient team utilization.

Major Learning Outcomes: Python, Django, MySQL.

Brief Description of working environment, expectations from the company: Cisco offers a supportive, understanding and encouraging atmosphere. Cisco is filled with opportunities needing to be explored. I'd recommend it as a PS2 station

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Name: Anuraj Singh (2015H112188P)

Student Write-up

Short Summary of work done during PS-II: Worked in security domain under SBG unit on a product NG-SMA. It is a cloud based product which manages email and web security appliances of the organisation. Worked primarily on UI and automation.

Tools used (Development tools - H/w, S/w): Angularjs, node js, cucumber, java.

Objectives of the project: NGSMA is a next generation cloud based product that will manage the security requirements of the organisations. I worked on UI and build an automation library for the project that will be used for automation test cases enabling behaviour driven development.

Outcomes of the project: Project is approaching beta release and my work will be used for production, we did few poc's and build our library on top of that.

Major Learning Outcomes: It was a very good experience to work a product that is approaching beta. Learned to write production ready code under tight deadlines. Steep learning curve for few technologies and was exposed to a wide range of technology stack.

Brief Description of working environment, expectations from the company: Cisco has an amazing campus and talented workforce. Our mentor is awesome in terms of knowledge and support. It is a really good experience to work in Cisco.

Name: Bikkumala Karthik (2012B4A7748H)

Student Write-up

Short Summary of work done during PS-II: This Wireless LAN Controllers (WLC) are often unable to provide connection because of certain issues, which relate to the client end or the provider or the means of connection. These issues also known as flags hamper the productivity of the business and must be resolved as soon as possible. Manual techniques are quite slow and in this world of fast technology, it is imperative to provide for automatic and intelligent solutions for such errors. The aim of

this is project is to develop a tool that extracts the log data of the Access Points and WLCs for developing an algorithm in order to detect frequent errors and suggest ways to prevent them.

Tools used (Development tools - H/w, S/w): Elasticsearch, Logstash, Kibana, Hive.

Objectives of the project: The purpose of the system is to make the process of finding faults in the process of clients life cycle in the existing networks easier to find. No previous system existed for the same and the technical administrators had to manually download every log related to a particular user and thereafter find the anomalies. The proposed system is meant to remove this manual work by displaying all important log data on a dashboard which can also be dynamically queried.

Outcomes of the project: The health monitoring system is an improvement over the previous system as the amount of time consumed in the same process without the help of this tool can be 5-10 times more. The health monitoring system is an end point tool for the clients of Cisco's widespread wireless LAN controllers as well as workforce in Cisco who aim to troubleshoot the problems encountered by clients on a day to day basis. The logs are sent in from the wireless LAN controller in real time while the Logstash script continues to ingest it into the NoSQL database Elasticsearch. Next, the integration between Apache Hive and Elasticsearch allows to query from Hive into Elasticsearch and output the results onto a CSV file. This CSV file in ingested back into Elasticsearch so that Kibana can access the results and display them in the form of visualizations such as graphs, pie charts and time series graphs.

Major Learning Outcomes: Working on the project "Health Monitoring System for Wireless LAN Controller" has given enormous amount of knowledge on different fields of study. During the project I learnt corporate environment skills and time management also.

Brief Description of working environment, expectations from the company: Working at Cisco has been an amazing experience. Interning at a company which is a market leader in networking was a great learning expedition for me. Cisco is a global company and with several cross-functional teams. It is a perfect blend of management and technical and thus gives several opportunities to learn various skillsets. I was a part of the Core Software group (CSG) - wireless in the Engineering department. The internship allowed me to further explore and implement the concepts I've learned in my classroom, thus fulfilling my Academic learning objectives. I got to interact with Director and various other senior managers who gave me career advice which will definitely be helpful in my long term career. These 5 months of PS at Cisco Systems has given me a smooth transition from academia to industry.

Name: Srujana Cheruvu (2012B5A7899H)

Student Write-up

Short Summary of work done during PS-II: The BU I worked under, comes up with a new release every 3 months or so. Every project of the BU is required to be uploaded in a portal that is for book-keeping of what all assets they have used in the project and to check if the dependencies used in the project have any updates (since, these are open source, they can be updated).

As of now, the addition of these assets to the tool is being done manually. The aim of our project was to automate this process using a maven plugin.

Objectives of the project: Automation.

Outcomes of the project: This project can be turned into a tool, and that would provide the employees with an easier way of adding and managing projects on their portal.

Major Learning Outcomes: Build Systems - Apache ANT and Maven; learned how to use many java packages; got an exposure to shell programming.

Brief Description of working environment, expectations from the company: Working at Cisco has been an amazing experience. Interning at a company which is a market leader in networking was a great learning expedition for me. Cisco is a global company and with several cross-functional teams. It is a perfect blend of management and technical and thus gives several opportunities to learn various skill sets. I was a part of the Hosted Collaboration Solutions (HCS) BU in the Engineering department.

As a part of the team, I was assigned an automation project which the employees have been doing manually till now. The internship allowed me to further explore and implement the concepts I've learned in my classroom, thus fulfilling my Academic learning objectives.

Name: Anchal Bhalotia (2013AAPS253H)

Student Write-up

Short Summary of work done during PS-II: The work mostly comprised of designing and developing software for the precise time protocol simulator.

Tools used (Development tools - H/w, S/w): Software.

Objectives of the project: IEEE 1588 Precise Time Protocol Simulator.

Outcomes of the project: Packet Field Validation.

Major Learning Outcomes: Programming and networking concepts.

Brief Description of working environment, expectations from the company: The working environment is amazing, specially the work culture. It gives time for a person to explore different things.

Name: Ayush Singhal (2013AAPS643H)

Student Write-up

Short Summary of work done during PS-II: I worked on mapping of vendor neutral data models (written in YANG) developed by OpenConfig. It is an informal working group of network operators sharing the goal of moving our network toward a more dynamic, programmable infrastructure. They aim to achieve their goal by adopting Software defined networking principles such as declarative configuration and model driven management and operations. Their Initial focus is on compiling a consistent set of vendor neutral data models (written in YANG) based on actual operational needs by consulting with various network operators. As there are many data model sub-trees. I worked on local routing feature of Network Instance Model. A network instance is defined to be discreet forwarding table on a network element, which contains Layer 3 and Layer 2 protocols entries. Each network instance may instantiate its own sets of protocols which control installation of forwarding entries into one or more tables (which may be Layer 2 FIBs (Forwarding Information Base), or Layer 3 RIBs (Routing Information Base)). This model is very useful for Internet Service Providers. As every customer requires different set of services. For example one may require L2 and L3 layer VPN services and other may require only Layer 3 services. This YANG data model is constructed to configure and retrieve operational data related to such instances. Local Routing belong to layer 3. It contains set of static routes manually configured by

network administrators. We need to map Open config data model to Cisco Specific model. It requires both forward and reverse mappings. In case of router configuration only forward mapping functions will get hit while for retrieving router operational and configuration data both forward and reverse mapping functions will get hit.

Tools used (Development tools - H/w, S/w): C and Python.

Objectives of the project: Development of local routing feature for Network Instance Model.

Outcomes of the project: Able to configure local routes for different network instances and streaming telemetry for network monitoring.

Major Learning Outcomes: Learned about YANG Data modelling Language, NETCONF protocol, SNMP protocol, Unit Testing Automation of Software. IOS XR Architecture, Web based training for course titled Internet of Things in 5G.

Brief Description of working environment, expectations from the company: Cisco is a large organization which deals with various technological aspects. They have both hardware and software opportunities in various fields. Work is mostly team oriented. Work is a mix of development and Quality improvement of code. In Engineering Department you need to take collaborate with teams of different domain expertise. Work culture is good and people are very helpful. There are good amount of learning opportunities within Cisco. Learning and Development Department of Cisco offers you a wide variety of paid courses for which expenses will be taken care by your manager. You can opt for them within budget allocated to each employee. You can easily switch between teams. It offers you a wide variety of choices as its spectrum of work is huge. Work timings are flexible. Cisco Bangalore campus has a Medical Center. It also has sports, gym and yoga facilities all of them free of cost for employees.

Name: ASTHA GUPTA (2014H313058H)

Student Write-up

Short Summary of work done during PS-II: Working in Email Security on the process of Automation of various Engines Updates which is already in place in Cisco as a manual setup.

Tools used (Development tools - H/w, S/w): Python modules - Pexpect, Paramiko, Boto3.

Amazon Cloud Services - Dynamodb, S3 Service jQuery, Javascript, Html.

Objectives of the project: The major objective is to automate the entire process of Engine Updates which is running manually now, depending upon the engines the process of automation is concluded specific to every engine.

Outcomes of the project: Able to finish the process of automation for one Engine Graymail in Cisco environment in the PS tenure. Now the autoamtion has taken upon the manual process thereby reducing the manual effort.

Major Learning Outcomes: 1.Learning to work with the Amazon Cloud Services.

2. Python language and the major modules including Boto, Paramiko, Pexpect.

3. Integrating the modules and working by writing codes which connects Amazon Services using API AND Python language

4. Automate the entire manual process of engine validation for the respective engines.

Brief Description of working environment, expectations from the company: Working environment in Cisco is pretty good, there is certain balance which exists here. Tech leads and mentor are always ready to help. If you wish to learn, they provide a very suitable culture to learn and implement the work. In the end, a great internship form Cisco.

Name: Sreekesh S (2015H140026G)

Student Write-up

Short Summary of work done during PS-II: Developed a workflow engine to create the telemetry payload for some proprietary devices. Model driven telemetry requires extensive programming to create the telemetry payload. This process was simplified by a tinplating process, dividing the program into smaller parts, and using a workflow approach to join them together.

Tools used (Development tools - H/w, S/w): MxGraph API, Ptolemy, HTML5, javascript, Angular JS framework, Java, spring framework.

Objectives of the project: To develop a workflow engine to create telemetry payload for Cisco devices

Outcomes of the project: To develop a UI and backend to create telemetry payload. To automate the process of telemetry payload creation.

Major Learning Outcomes: learned about workflows, how workflows can be used to automate tasks. learned basics of web development.

Brief Description of working environment, expectations from the company: The working environment is stimulating in terms of the help you get from mentors and colleagues. There are no hard and fast deadlines for projects. But the sooner you finish, you will get to learn new things.

PS-II Station: EduPristine - Neev Knowledge Management Pvt. Ltd. , Mumbai

Student

Name: Sudharsan (2013A4PS291G)

Student Write-up

Short Summary of work done during PS-II: The project is to increase the overall conversion rate of their incoming enqueries or leads. To do this I worked on a lead scoring model which finds the likelihood of the customer joining the programme, from the characteristics of the customers.

Tools used (Development tools - H/w, S/w): R, Python, Machine Learning, Excel.

Objectives of the project: To predict the quality of the incoming customer queries or leads, score them and assign it to the counselors accordingly to increase the overall sales. By Quality here, we mean the probability of a particular lead being converted to a sale.

Q1) Is there a way to determine the quality of the leads before they are assigned?

Q2) What are the important parameters that will affect the quality of the lead?

Q3) How to quantify the quality of the Counsellor?

Q4) What is the appropriate method of lead assignment to the counsellor which will optimize between the increase in overall sales and employees incentives and motivation?

Outcomes of the project: A lead scoring model where we can score which predicts it's quality and in an aggregate level its conversion. A lead assigning model where leads are assigned to different sales counsellors based on their sales record. The lead scoring model is to be used as benchmark marketing activities with objective to increase the score of leads.

Major Learning Outcomes: Predictive Analytics and machine learning algorithm.

Brief Description of working environment, expectations from the company: Work is good. The project allotted could vary a lot depending on the requirements. They respect the interns a lot and the work you do is most likely to be implemented. The stipend is great. If you intend to be an entrepreneur, you'll learn a lot about what goes behind running a business. I personally got to learn about every department

in EduPristine as well as about the market and customers. The bad part of it is having a six day workweek.

PS-II Station: EMC, Bangalore

Student

Name: Vipul Singh (2012B3A7511G)

Student Write-up

Short Summary of work done during PS-II: I did my internship in Data Domain which is a backup appliance generally used as storage of last resort. My work was mostly relate to Directory Management (DM) and File migration (fmig) components of DDFS (data domain file system). I also got to work on a read_failure CLI. I also worked in various side projects like MDU (minimal disruptive upgrade) and DD_DOCKY (data domain - docker solution).

Objectives of the project: My first project, DD_Docky was related to a docker based solution for DD DUTI infrastructure. Its main objective to provide a customized container which could be used as desktop DD and various DUTI tests can be run on this container.

Another project was related to file migration where the main objective was to verify the functionality of app-managed data movement policy for mtree.

The project on Cloud_files_with_read_failure CLI had the main objective of enhancing and adding new fields to this CLI.

Minimal disruptive upgrade (MDU):- The main objective of this project was to reduce the dependencies from central library (libclient.a & libclient.so). This would lead to reduced time of dd_make. It will also reduce the complexity as we are dividing DDFS components to a new library.

Outcomes of the project: Projects related to file migration and CLI were successfully submitted and the bugs related to these features were resolved. Minimal disruptive upgrade is still in process.

Major Learning Outcomes: I got a learn a lot about data storage and networks. Also, understood the deduplication mechanism and cryptography methods used by Data Domain for data deduplication and data compression. I understood the various components of Data domain, their importance and their individual functionality.

Brief Description of working environment, expectations from the company: Working environment was really encouraging and people were helpful. As expected, i got to learn a lot about data storage appliances while working here. It was a major learning curve for me.

Name: Abhijit Panda (2012B2A7942H)

Student Write-up

Short Summary of work done during PS-II: My first project dealt with using scripts to filter out the errors and warnings pertaining to the Control Station, Data Movers and Storage Systems.The project was based on autorecovery of the vmax box which was achieved by executing the commands which were giving errors in the box. The second project was based on snapvx which dealt with creating snapshots by linking the source and the target.A thorough understanding of the system management tools , code study and architecture was done for this project.

Tools used (Development tools - H/w, S/w): Shell scripting, Eiffel, C++.

Objectives of the project: My first project dealt with using scripts to filter out the errors and warnings pertaining to the Control Station, Data Movers and Storage Systems.The second project was based on snapvx which dealt with creating snapshots by linking the source and the target.

Outcomes of the project: Autorecovery of the box was achieved in the first project.We could clearly filter out the errors and take the necessary action to solve the purpose.In second project we could successfully create snapshots from time to time by linking the source and the target device.

Major Learning Outcomes: Shell scripting, Eiffel,C++.

Brief Description of working environment, expectations from the company: The work environment of EMC is very good.Very flexible work hours and friendly environment.The technologies that they use are very good and the code is very flexible and easy to understand.The projects done were challenging but could be completed on time.The mentors who guided us were very friendly and not only they gave us tough challenges but also guided us to achieve our goals.

Name: Sneha Kulkarni (2012B4A7748G)

Student Write-up

Short Summary of work done during PS-II: My work involved front end development for the Data Domain System Management product. The user interface interacted with the Data Domain systems and they could be managed using this interface. All the functions carried out by DD systems could be managed by System Management product.

Tools used (Development tools - H/w, S/w): GWT, GXT.

Objectives of the project: To give user a way to manage their Data Domain systems.

Outcomes of the project: In this project, I was successfully able to deliver various features to be added in Data Domain System Manager.

Major Learning Outcomes: Major learning in front end development tools and also various backup and data protection options.

Brief Description of working environment, expectations from the company: The working environment was very good. Each member of my team helped me all the way through this project. The managers were flexible in assigning work of your interest.

PS-II Station: EMC, Pune

Student

Name: Sylvester J Victor (2015H103095P)

Student Write-up

Short Summary of work done during PS-II: Project 1 - Building a tool to automate the process of sizing which is used to for as a performance benchmark of various Data Domain Devices sold by EMC. Also detect anomaly and regression using the data collected.

Project 2 - Automating DUTI Test Cases, which are used to evaluate the Data Domain Devices and log anomalies and regression.

Tools used (Development tools - H/w, S/w): Language used Python and various other packages.

Objectives of the project: Project 1 - Automate the generation of sizing guide.

Project 2 - Automate DUTI Test Cases.

(Remove manual error and speed up the process)

Outcomes of the project: Project 1 completed, with extra features added to it, such as training a neural network to figure out errors and plots hinting anomalies and regression.

Project 2 ongoing (At the time of filling this form).

Major Learning Outcomes: Strengthen my python skills, learnt about the internal working of DD Devices and how to optimize them.

Brief Description of working environment, expectations from the company: Friendly, open minded, open for suggestions, professional, willing to teach.

Name: Abhimanyu Rawat (2015H103081P)

Student Write-up

Short Summary of work done during PS-II: I am developed an operating system tool, which will run on top of the EMC DDOS, to check the client side configuration while deploying the DDR and later to maintain/expand it.

Tools used (Development tools - H/w, S/w): CentOS, Windows NT machines, Python, Shell, bash, HTML, CSS, JS.

Objectives of the project: To develop a configuration checking tool to run on top of DDOS.

Outcomes of the project: Demoed the tool and now it's ready for the beta.

Major Learning Outcomes: Learned about whole bunch of protocols and operating system paradigms. object oriented design patterns etc.

Brief Description of working environment, expectations from the company: Very friendly staff and people there are very supporting. On the last day manager has offered me a job, so very excited to join them.

PS-II Station: Ericsson Global India Pvt. Ltd. , Bangalore

Student

Name: Dharinee Bhandari (2013A3PS264G)

Student Write-up

Short Summary of work done during PS-II: I completed three small projects. First project was generating and analyzing custom reports on code complexity metrics using CppDepend. Second required automation of bug backlogs. Third project was based on CLIPS, PPPoE etc configurations on vBNG.

Tools used (Development tools - H/w, S/w): Shell scripting, c, CppDepend and VBScript.

Objectives of the project: Automation of error detection and bug backlogs.

Outcomes of the project: Successfully automated. However improvements can be made in terms of static code.

Major Learning Outcomes: In depth knowledge of VBScripting and shell scripting.

Brief Description of working environment, expectations from the company: Complete work life balance, working hours stretch from 9-5. Additional benefits such as regular cultural events to break the monotony of work.

Name: Saurabh Kumar (2012B5A7848P)

Student Write-up

Short Summary of work done during PS-II: Developed infrastructure to collect logs in the code base without affecting the performance (the product is performance critical). Will make debugging easier in future.

Tools used (Development tools - H/w, S/w): C.

Objectives of the project: To develop an infrastructure for easy log collection.

Outcomes of the project: Developed the infrastructure for easy log collection.

Major Learning Outcomes: Handling long code base.

Brief Description of working environment, expectations from the company: Flexible timing, Helpful people, Lots of seniors from BITS, Code base is not documented so development is very hard for beginners. Expect projects related to telecom sector. Not much to do with CS.

Name: Y N S Vineela (2013APS112H)

Student Write-up

Short Summary of work done during PS-II: The first month was spent in learning the network technologies employed by Ericsson. Emphasis was laid on the Physical layer of networks. A project was allotted in February. Created skeleton of the directory for test module. Code review to upload the tests to Ericsson library to be done.

Tools used (Development tools - H/w, S/w): CppUTest Framework.

Objectives of the project: To write tests for the basic units of L2TP module in C, using CppUTest Framework for Unit Testing.

Outcomes of the project: To test if the functions are up to mark and if diverse input values yield satisfactory results.

Major Learning Outcomes: Experience in state-of-the-art testing technologies.

Brief Description of working environment, expectations from the company: The Bangalore R & D division of Ericsson chiefly concentrates on software products, features and services. Most of the software is coded in Java. The entrusted mentors and managers were very enthusiastic and hopeful that the internship would be an excellent and useful learning experience for both the parties involved.

The work culture at Ericsson encouraged us to work at our own pace and freely coordinate with experts at any level, be it a Manager or a director. We were free to come and leave at any time. Our inputs and

knowledge were welcomed and encouraged. Other employees were curious about our work and were brought up to par in monthly meetings where we gave presentations and code-walk through. Extra-curricular activities also find a platform at Ericsson. Quarterly-event called BEEP is a source of recreation and cheer for everyone. BITSian interns cheerfully participated in the singing and dance performances. The work given was moderately interesting. It was, however, a source of joy to see my work embedded into Ericsson libraries. The only con was that there wasn't much of a team interaction as mine was an individual project and my team-mates were busy with their own projects, which I didn't get to explore.

Name: Sanhita Sunil Dhamdhere (2013A3PS213G)

Student Write-up

Short Summary of work done during PS-II: It was nice experience here. I got a chance to work on good integration project and make documentation.

Tools used (Development tools - H/w, S/w): Java.

Objectives of the project: To integrate the system with tracking tracing software.

Outcomes of the project: The documentation was prepared which involved steps of how to do the integration.

Major Learning Outcomes: Exposure to new and advanced IT concepts.

Brief Description of working environment, expectations from the company: Work environment was great. The people here are nice and helpful. The mentor too helped in guiding throughout the project period.

Name: Saahithi Reddy (2013AAPS271H)

Student Write-up

Short Summary of work done during PS-II: Automating the installation of Openstack services with 2 different softwares.

Tools used (Development tools - H/w, S/w): Chef, Ansible, Openstack, opendaylight, openvswitch.

Objectives of the project: To install Openstack on different instances for testing a device at Ericsson.

Outcomes of the project: I was able to automate the installation. The time and effort needed to be spent on this was reduced.

Major Learning Outcomes: Explored different network configurations and understood more about several layer-2 and layer-3 networking devices and how they function.

Brief Description of working environment, expectations from the company: The working environment was very good and everyone working around were friendly and helpful. My mentor and manager guided me through the project all along. The company expects their interns to be excited and enthusiastic about their work.

Name: Abhinav Gupta (2013A3PS168G)

Student Write-up

Short Summary of work done during PS-II: Most of my work was on related to Python scripting. I had to use different packages in Python related to Regular expressions, Jenkins and Workbook to work on my project.

Tools used (Development tools - H/w, S/w): Jenkins, Python.

Objectives of the project: CI dashboard is maintained to take care of the code commits and the gating criteria for the commit in order to keep the mainline code sane and issue free. My project aimed to automate the CI dashboard and get away with manual execution of the commit procedures. This will help in maintaining the code sanity as well as keeping the dashboard updated in real time. All the code commits are handled by software named Jenkins which is used to update the major codes with the

changes made by the employees and testing it rigorously for any bugs in the code. So my job was to take the final test results of different jobs from Jenkins and present it on the dashboard.

Outcomes of the project: Successfully wrote scripts for presenting the final output of the jobs (success or failure: if failed the specific sub-job that has failed an the reason behind its failure) running on Jenkins and displaying in on the dashboard.

Major Learning Outcomes: I learnt Python scripting.

Brief Description of working environment, expectations from the company: Working environment was very nice. I didn't have any hard deadlines and got a lot of time to read on the tools and languages on which my main project was on. The company has a great work life balances and the company just expects you to be ready to learn different things.

PS-II Station: Fiber Link, Bangalore

Faculty

Name: Mohammad Saleem Bagewadi

Comments: I express true gratitude for the contributions made by the students and an understanding that these contributions were critical and exclusive to each individual. Industry mentors had wonderful capacity and the opportunities they gave to our students, helped to build strength and character. I asked students to be proactive in thinking before performance issues develop, I would like to put on record that because of hard work and inter personal skills and efforts that students have put in to make the project to a great success.

Appreciate the great organizations, where general willingness to learn did not go unnoticed. I want to take a moment to share an incident, where the student were asked to develop the features that are critical to the customers. They didn't disappointed; they understood highly complex innovations in very short span of time and delivered good quality code. Great Job, it means you've made a difference.

Student

Name: Gautam Singhania (2012B4A7495P)

Student Write-up

Short Summary of work done during PS-II: Worked with Google Android for Work to provide enterprise customer with better experience while handling devices that access organizational data.

Tools used (Development tools - H/w, S/w): Java, Oracle, Apache, tomcat, git.

Objectives of the project: Enhancing customer experience.

Outcomes of the project: Laid down the infrastructure for further development.

Major Learning Outcomes: Learn major industrial tools in development.

Brief Description of working environment, expectations from the company: Working environment and company was good.

Name: Vijay Kahalekar (2013A3PS250G)

Student Write-up

Short Summary of work done during PS-II: Woked with windows agent team. Mainly Universal Windows Platform developement.

Tools used (Development tools - H/w, S/w): Visual Studio, Installshield, Sourcetree, SQL Developer tools, Powershell ISE.

Objectives of the project: Unified Endpoint Management-integration of MaaS agent and BigFix agent owned by IBM for a new service offering.

Outcomes of the project: Enhancements to MaaS agent complete.

Major Learning Outcomes: Learned how a software company works end to end.

Brief Description of working environment, expectations from the company: There is no concept of intern projects. Work given will be same as that of FTEs. Can shift teams very easily. No tight deadlines for interns. Ideal for EEE/ENI students who are looking for an IT company. PPO chances are low.

Name: Saravanthi Teddu (2013AAPS293H)

Student Write-up

Short Summary of work done during PS-II: MaaS360 is an Enterprise Mobility Management which is of huge demand in the current market with respect to the security they provide to the devices that come into an organization in the form of BYOD. My work in this organization involved learning of Java (Spring Framework), basic Web development (both server side and client side), Oracle Database. Its difficult to understand the frameworks they have been use in the beginning and it takes time to cope with the speed.

Objectives of the project: Branding of MaaS360, Localization of Web Portal, Customer Service

Outcomes of the project: All the work I did will show and remain in the Product if that provides any motivation. Work will never be boring, redundant and also not easy

Major Learning Outcomes: Software Development in SaaS (MaaS360 product)

Brief Description of working environment, expectations from the company: Everyone are friendly and treat you as an employee. The work they provide will help you slowly understand the way they work. They are so willing to help and expect us to come back and ask questions.

Name: Anand J S (2013A3PS131G)

Student Write-up

Short Summary of work done during PS-II: Worked as a developer in cloud extender team of MaaS360 adding enhancements to the software and debugging issues.

Tools used (Development tools - H/w, S/w): Java - Eclipse, Oracle sql developer, git.

Objectives of the project: Enhancements for Cloud Extender Health Check Alerts.

Outcomes of the project: Made enhancements for Health Check Alerts ensuring its timely delivery.

Brief Description of working environment, expectations from the company: Fiberlink is a good place to work and learn.

PS-II Station: GE Digital, Bangalore

Student

Name: Vishakha Gupta (2015H112166P)

Student Write-up

Short Summary of work done during PS-II: Side Projects: Worked on setting up Docker on corporate environment and uploading docker images on cloud foundry platform. Worked with setting up Predix machine for collection sensor data.

Main Project:

Worked with sensitive sensor data. Aim was to mask sensitive information using various data masking techniques. Benchmarked masking techniques using sequential as well as parallel programming. Create a map reduce program to time various phases of the process, namely, 1) retrieve data 2) identify sensitive information 3) mask data 4) store data.

Tools used (Development tools - H/w, S/w): Python, Java, Predix, Hadoop, PostgreSQL.

Objectives of the project: Obfuscation of sensitive data sensor data, to enable sharing of data and preventing misuse by end user.

Outcomes of the project: If the end user need security then truncation or mask out is more suitable. If the end user need to preserve original data then encryption is suitable.

Major Learning Outcomes: Compared various data masking techniques Truncation, Mask out, Shuffle and encryption. Established that encryption takes maximum time, but preserves the original data. Whereas, other techniques are more secure as they don't expose the original data. Shuffling is less secure since the original data can still be extracted from shuffled data.

Brief Description of working environment, expectations from the company: Good working environment. Since Digital is a new branch of GE there are many opportunities to learn and grow. There are many exciting projects going on at GE Digital. Conversion rate was not very high, since they hire a lot of interns. You may not necessarily get into a good team, but the HRs are quite helpful in case you need

a change in work. The young crowd is less at GE, so some days get really dull. Otherwise, a good place to work.

Name: VADREVU SAMHITA (2012B4A7700H)

Student Write-up

Short Summary of work done during PS-II: The projects involved automation of the processes that mostly do not require much human intervention, and these processes are mostly of the Finance team of the Global Operations business of GE

Tools used (Development tools - H/w, S/w): Python, Predix, UiPath.

Objectives of the project: To reduce the human effort using the state of art technologies and tools and contribute towards the digitalization of the company.

Outcomes of the project: A one click application which performs the same and even more advanced tasks than the humans, and thus automating the system.

Major Learning Outcomes: Exposure to various technical tools and also understanding the corporate culture of a well established company.

Brief Description of working environment, expectations from the company: GE is a 125 year old company with various businesses, and the office here consists of IT employees from these businesses put under the umbrella of GE Digital. The vision of the company is to make GE Digital one of the top most in the IT Industry, and the working environment is established in order to achieve this. As an intern, a good idea of the corporate culture and the transformation into a Digital Company is obtained, and helps in the overall development of the student.

Name: SATYA PRAKASH PATTNAIK (2015H103088P)

Student Write-up

Short Summary of work done during PS-II: Datawarehousing.

Tools used (Development tools - H/w, S/w): Golang, Nodejs, Redshift and Presto.

Objectives of the project: Datawarehouse for pRedix.

Outcomes of the project: Datawarehouse for pRedix.

Major Learning Outcomes: A lot.

Brief Description of working environment, expectations from the company: Very good culture.

PS-II Station: GGK Technologies - Data Analytics, Hyderabad

Student

Name: Jacob Jose (2012B1AA707H)

Student Write-up

Short Summary of work done during PS-II: AWS and Natural Language Processing

Objectives of the project: Backup DynamoDB data; Create NLP application

Outcomes of the project: Successfully delivered requirements

Major Learning Outcomes: Learned about cloud technologies and NLP

Brief Description of working environment, expectations from the company: Work was good. Company was good.

Name: Bhanu Sanghi (2013A8PS500H)

Student Write-up

Short Summary of work done during PS-II: Learnt angular 2 framework and engaged in development and debugging of a web application.Plenty to learn but the work hours are strict, lenient in holidays if sick.Worked on a project in vue.js framework.

Tools used (Development tools - H/w, S/w): Visual Studio, Angular 2, Vue.js.

Objectives of the project: Creating an internal application for automation and maintenance of testing data.

Outcomes of the project: Successfully working and deployed as an internal application.

Major Learning Outcomes: C#, in depth angular, vue.js.

Brief Description of working environment, expectations from the company: The working environment is good, professional, and not so strict except in terms of work hours. You are expected to work 8.5 hours a day excluding your lunch hours.Their is a nice peer learning environment here. Loads of chances of grabbing a PPO and your branch doesn't matter at all if you are looking for a relatively easy chance of grabbing a PPO in IT.

PS-II Station: HCL Technologies, Noida

Student

Name: Abhinav Gupta (2013A7PS103G)

Student Write-up

Short Summary of work done during PS-II: I was a developer in the team that built the HCL's chatbot 'Lucy'. My role was to add features/services to it. Weather API, qna maker, scheduler, automater, reverse-bot, were some of my contributions.

I was also assigned the technical SPOC (single point of contact) for one of the projects.

Tools used (Development tools - H/w, S/w): Nodejs, python, IBM bluemix, aws and amazon alexa

Objectives of the project: Service desk automation.

Outcomes of the project: Service desk automated.

Major Learning Outcomes: Understanding of MNC work culture. Using PASS writing industry standard code.

Brief Description of working environment, expectations from the company: HCL has a healthy work environment. Everyone around os friendly and helpful. Your work and growth depends majorly on your manager. In my case, I found a mentor in mine, who would tell me how to proceed before assigning work, and was always there whenever I got stuck.

PS-II Station: Here Maps - Software Testing, Mumbai

Student

Name: KRUT KANJIYA (2013A3PS231G)

Student Write-up

Short Summary of work done during PS-II: Testing of the Framework they have recently developed called Product Validation Framework.

Tools used (Development tools - H/w, S/w): I wasn't part of development, just testing.

Objectives of the project: To make this framework's working perfect, test each and every case and analyse the output.

Outcomes of the project: Better Functioning framework.

Major Learning Outcomes: Regular Expressions (was major part of my Testing), some basic SQL, rest of the part was UI based.

Brief Description of working environment, expectations from the company: This is The Best working environment. 5 Days a week. No restriction on IN and OUT timing. And if you have minor health problem or any personal issue you can also work from home. People are very friendly and good in behavior. Its Perfect place to work.

Name: Amartya Tiwari (2013A7PS092P)

Student Write-up

Short Summary of work done during PS-II: There are testing scripts used for confirming that every single facet of the Places data store and services are working perfectly. These tests are written in JMeter, but the team is migrating the scripts from JMeter to Automation Testing Framework (ATF) designed by them which is a spring based framework. My initial task was to understand the testing

scripts and the systems they were testing and then to migrate those scripts to this framework. ATF reduces the amount of redundancy in code and is readable.

My second task was to help in the testing of and in creating the rule sets for Product Validation Framework (PVF). The Places team has a product which is an XML containing the details of all the places of interest, the map locations that is to be delivered to the customer. The PVF is a UI based interface used for creating the rules to validate the XML product before releasing it to the customer. It uses Drools as the business rules management system. My task was to create the complex validation rules using the decision tables provided in Drools and to test the final product for its validity.

Tools used (Development tools - H/w, S/w): Eclipse.

Objectives of the project: 1.) Understand the testing scripts used for ensuring proper execution of all the services. Migrate the testing scripts to the Automation Testing Framework, a spring based Framework.

2.) Test the newly-developed Product Validation Framework. Add the more complex rules to the system using Drools and decision tables.

Outcomes of the project: A hands on experience on working on a testing framework used by the Places data store. I was also involved in the testing of a developed software used for validating the product published by the Places team.

Major Learning Outcomes: A thorough understanding of Object Oriented Programming principles with a direct exposure to the spring framework used for building many enterprise applications and products. I got a lot of exposure to different areas of technologies used for creating the different services used by Places team (Hadoop, Solr, REST based APIs and architecture, etc.) and designing tests for ensuring proper functionality for each of these services.

I also got an opportunity to get into the debugging aspect of software development which was something quite different and new to learn.

Brief Description of working environment, expectations from the company: The Here workplace is one of the best places to work in terms of their hospitality, freedom to pursue whatever you want, everyone

being approachable and the mentor's eagerness to help you and assist you in any way possible. There is a really good sense of camaraderie among the employees and it is a very friendly place to work in.

In terms of expectations from the company, they do get quite a few good projects here and there. Most of their projects are either Web based service developments involving a lot of Angular or JS in general, or they are Java based projects focused on improving the already-existing services or building up on them. There are a few machine learning prospects here as well with the focus on trying to eliminate the human component from the map creation process.

Name: Mohit Agarwal (2013A3PS327H)

Student Write-up

Short Summary of work done during PS-II: The purpose of my project was to create a convolutional neural network which should be able to classify the objects and detect their position in the aerial images. The purpose of this model is to reduce human input in map creation thus reducing the time needed to code the map and at the same time achieving considerable accuracy. My model consist of transfer learning of a pretrained deeplab resnet model (pretrained on pascal-VOC dataset having 21 classes) to my dataset of aerial images having 6 classes including background.

Tools used (Development tools - H/w, S/w): Python 2.7, Tensorflow, AWS EC2 intances.

Objectives of the project: To create a convolutional neural network for Image Segmentation of Aerial Images and train it.

Outcomes of the project: Model has been created which can segment different objects from Aerial Images with good accuracy.

Major Learning Outcomes: Concepts of machine learning, computer vision have been acquired.

Brief Description of working environment, expectations from the company: Here Maps focus a lot on the overall development of the employees and therefore provide good learning opportunities on the technical side as well as non-technical side. Along with work there are many fun activities which make

sure that employees have good work life balance. Here Maps expects interns to have appetite to learn new things and apply them in the projects. With a wide range of projects present in the organisation interns get great opportunities to learn various technologies.

Name: Shubham Jain (2013A3PS174G)

Student Write-up

Short Summary of work done during PS-II: I developed the web application and android app for the creation and maintenance of the bus routes.

Tools used (Development tools - H/w, S/w): Webstorm, Android Studio.

Objectives of the project: Create Route Management platform for web and android.

Outcomes of the project: Successfully completed the project.

Major Learning Outcomes: I got to learn lot of new languages, technologies, frameworks like Javascript, Jquery, Angualr, typescript, android development and nodejs.

Brief Description of working environment, expectations from the company: Working environment was very good my mentor was very helpful throughout the course of my project.

Name: Mandava Bipin Chowdary (2013A7PS009H)

Student Write-up

Short Summary of work done during PS-II: The work done by me is mostly as a part of agile Software Development. Every sprint (15 days) a validation rule will be given to a developer who upon developing, Testing (on tools (here Proprietary), Peer testing, Integration Testing) the code, pushes it to the main code base. Being in such a team, first few days of my intern time went for understanding the map domain, how do they actually put the real time massive data into code bases and how do they structure,

maintain and update it. After getting a fair understanding, i slowly began to code the rules on map data by taking help of colleagues and finally i have gained a decent pace in developing them. Later i began working on another side by project (involving python, ARCGIS) where i need to modify a tool schema which takes raw data as input and moulds them into json files required for another tool's ingestion.

Over all its a decent and interesting work to me as there is always a scope of learning at HERE.

Tools used (Development tools - H/w, S/w): Eclipse, SQL Developer, here proprietary tools.

Objectives of the project: Software Development project, where we should be able to deliver the validation rules given to us every 15 days (Agile software development).

Outcomes of the project: Creating the validation rules which are further used to validate the HERE Map Data, tools etc.

Major Learning Outcomes: Learning about the Map Data, how they are made, maintained, updated. How things actually work on these maps.

Brief Description of working environment, expectations from the company: The work Domain of the company is good in the sense that it provides all kinds of work from software testing, web/App development to machine learning, neural networks. Also being in a map domain, its interesting for any one to know how things actually work the way they do.

The working environment also keeps its level up as to suit the working domain. Technical infrastructure, culture, peer interactions, stress busters, goodies nothing to complain about.

This company has no such preference for branch, all it looks into is the ability to take up issues/tasks and successfully deliver them on time and possibly provide some optimizing/innovative solutions to the problems they face.

I am sure this company helps in exposing the student to industry standards and will be of great learning exposure to student.

Name: Gautam Singh (2012B3A3467P)

Student Write-up

Short Summary of work done during PS-II: When debugging any issues using IDE like eclipse or intellij, we use breakpoints.

The code when debugged, can reach the breakpoint after a long time, depending on the steps to be executed prior to reaching the breakpoint. It is difficult to test such code with different values or with code changes. Integration tests cannot be written efficiently.

To overcome this, if we can have a mechanism to serialize the state of all objects needed by the method(s) under test, it would be easy to test again multiple times without having to hit the database or execute all the prior steps.

Tools used (Development tools - H/w, S/w): IntelliJ IDE, JAVA Instrumentation, JAVA Reflection, Git, Source Tree, MAVEN.

Objectives of the project: Making use of JAVA reflection and serialization to reduce redundancy and faster debugging of lengthy JAVA code.

Outcomes of the project: A debugging standalone application used to save the state of program.

Major Learning Outcomes: JAVA Instrumentation. JAVA Reflection. Git. Maven. IntelliJ. Source Tree.

Brief Description of working environment, expectations from the company: Nice environment. Good work.

Name: Neerav Dahiya (2012B5A8492G)

Student Write-up

Short Summary of work done during PS-II: Worked on a software development project that was aimed at redesigning the architecture of the existing application and incorporating new technologies like AWS S3 bucket, Google Protobuf, Scala etc. The project required a good understanding of GIS domain. The

application developed in this project creates a geographical dataset according to a specific standard, which used in many navigation systems for routing and geocoding. This application is light weight, faster and more memory efficient than the existing application. It was written according to the functional programming paradigm.

Tools used (Development tools - H/w, S/w): Scala, Java, pl/sql, JDBC, git, maven, sbt, protobuf, Oracle Database.

Objectives of the project: The object of the project was to redesign the existing application for better performance, reduction in number of operations resulting in faster delivery rates.

Outcomes of the project: Successfully completed the implementation of one of the modules (out of 5) of the application. A performance gain of 3 was noted.

Major Learning Outcomes: The new application was three times faster than the existing application. Functional programming paradigm was used which is much more readable.

Brief Description of working environment, expectations from the company: Everyone in the team I was assigned to was extremely helpful and friendly. The organisation treats the interns as any of their full time employees. The learning opportunities are immense. Laptops are also provided by the organisation.

Name: Pranjal Gupta (2012B3A3437P)

Student Write-up

Short Summary of work done during PS-II: My work was basically on image processing using opencv and Convolutional Neural Network. Although, there are not too many mentors for work related to images because most of the image related work of this company happens overseas. But you will learn a lot if you have any specific task to do related to image processing.

Tools used (Development tools - H/w, S/w): Python, OpenCV.

Objectives of the project: Template Matching using OpenCV, Object detection using Fast Region Convolutional Neural Network, Finding the number of lanes on the road in an image.

Outcomes of the project: All objectives achieved.

Major Learning Outcomes: PYTHON, OPENCV.

Brief Description of working environment, expectations from the company: Standard IT culture and working environment and is still improving in Indian offices. Overseas offices have better projects than Indian Offices.

PS-II Station: Hortonworks, Bangalore

Student

Name: Lokesh Jain (2012B4A7827P)

Student Write-up

Short Summary of work done during PS-II: Added the capability of Apache Hadoop YARN docker containers to communicate with each other and the instances of Google Compute Engine (GCE). Required configuring of docker bridge network and routing in GCE. Added the capability of running System Services which are high priority services required during Resource Manager startup of YARN.

Tools used (Development tools - H/w, S/w): S/w - Intellij IDEA.

Objectives of the project: 1) To enable communication of docker containers with other docker containers and with the Google Compute Engine instances where the docker containers run.

2) Enable System Services startup in Apache Hadoop YARN.

Outcomes of the project: 1) Enabled YARN containers to be run as docker containers on Google Compute Engine instances.

2) Enabled System Services to be started with Resource Manager in YARN.

Major Learning Outcomes: Familiarity with docker, networks in docker and Google Compute Engine, Apache Hadoop YARN.

Brief Description of working environment, expectations from the company: The working environment is very good. The company builds and upgrades a lot of Apache Hadoop components.

Name: Jhanavi Sheth (2013A7PS096P)

Student Write-up

Short Summary of work done during PS-II: Worked on the project titled "Log Analysis using Machine Learning and Artificial Intelligence". Made several amendments to the existing project. Worked on validating the unsupervised algorithm used for clustering errors picked up from analyzing log files. Devised algorithms to compare two stack traces.

Objectives of the project: To improve the fuzzy logic used to compare two arrays of strings and thereby classify them as similar or dissimilar. Make several enhancements to the existing codebase.

Outcomes of the project: Enhancements added to the remote repository on Github have been pushed to production and are live now.

Major Learning Outcomes: Was familiarized with Big Data and Hadoop concepts. Did hands-on implementation of a few machine learning algorithms and saw the results manifesting as a graph hosted on a dashboard.

Brief Description of working environment, expectations from the company: The work environment is really good. The mentors and colleagues are very knowledgeable and helpful.

PS-II Station: IMI Mobile, Hyderabad

Student

Name: Abhiram (2012B4A8558G)

Student Write-up

Short Summary of work done during PS-II: Wireframes

Tools used (Development tools - H/w, S/w): UXpin.

Objectives of the project: Design a workflow.

Outcomes of the project: Wireframes.

Major Learning Outcomes: Design.

Brief Description of working environment, expectations from the company: Good work environment

PS-II Station: Indiamart Intermesh Ltd., Noida

Student

Name: Nitin Chaudhary (2015H149291P)

Student Write-up

Short Summary of work done during PS-II: Work on the maintenance of hygiene of the Product. Prepare weekly and Monthly report for the purpose of sharing useful insight of current stage of product and how can us improve the process.

Tools used (Development tools - H/w, S/w): Google Analytics, MS Excel, Google docs, Jira tool for reporting bug.

Objectives of the project: The scope is to improve the search processes and methodology performed at the IndiaMART by applying efficient work processes (work done by people, equipment and information systems). Benchmarking essentially works to the extent that benchmarks can be agreed and suitable comparators found for which measurements are also available.

Outcomes of the project: Increase in the effectiveness of search and Auto search process and proposed UI/UX changes as compare to other B2B websites.Establish search scope suggestions on the basis of benchmark search parameters.Adopt better UI design from various competitors for search and advance search processes.Improvements in accuracy/relevancy of search by reducing the performance gap.

Major Learning Outcomes: Learning of Excel skills, Data analytics skills, Tools like Webmaster and Jira, Team management, PR value.

Brief Description of working environment, expectations from the company: A very good working environment with helpful and supporting colleagues and seniors. Good management and HR staff and maintain transparency in the process. Working in team gives me best experiences. As Indiamart is largest B2B online marketplace so it would give me best opportunities in future and opens doors to E commerce fields. It would definitely improve my analytics and management skills which would help me and my organization for mutual benefit and support.

Name: Divya Sharma (2015H149294P)

Student Write-up

Short Summary of work done during PS-II: I have worked in various areas where I started with preparing an Employee Engagement Plan for the company that was new for it as well required to keep the employees of this place satisfied, happy and content. I also worked on my other project which was assisting the product manager in 'Improving the customer Life Cycle'. In IndiaMART we connect the buyers with the sellers and these sellers are IndiaMART's client or customer. To make the experience of supplier good with IndiaMART while he registers with us and contact buyers through the catalog formed by IndiaMART, we are finding the issues in the present system and trying to rectify those in order to make this process smooth. These issues are present in communication sent from IndiaMART or in various services provided to the supplier.

I also got a chance to work on a digital marketing field which was 'email marketing'. Here I dealt with communicating with our suppliers for upselling them our products through emails. This process involved creating content, changing htmls and subject lines of the emails sent to our suppliers regularly for various products. It also involved creating and submitting a report on the weekly performance of our mails sent to suppliers indicated through click rate, open rate achieved and also the revenue collected. I also focused on various ways to make our mailers land in Primary tab of Gmail in order to increase our click rates.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Moqups, Notepad++ and html.

Objectives of the project: Objective of my 1st project (Employee Engagement) was to create an Employee Engagement Plan that'll help in making the employees more happy, content and satisfied in their work. The objective of my other project (Email marketing) was to increase our click rates and open rates in order to increase more traffic through emails.

Outcomes of the project: I prepared an Employee Engagement plan where i introduced some new ideas in fields of "Engagement Activities" and "Rewards & Recognition". In my other project, (email marketing) i worked on several new ideas that led to increment in our click rate as well as open rates.

Major Learning Outcomes: I learnt working on several tools like html, moqups, Microsoft excel. I learnt about various loopholes that we are having in our system which is hindering the smooth supplier life

cycle process in Indiamart. I also learnt about various email marketing techniques and how we implement those.

Brief Description of working environment, expectations from the company: Employees of the company are cooperative and coordinating. My team members constantly guided me throughout my project and provided their help wherever needed. People are rewarded for their performances and also given opportunity to work in different teams and thus learn a lot. So far, IndiaMART has been able to keep up with my expectations from it and i hope it continues to remain the same way.

PS-II Station: Indus OS, Mumbai

Student

Name: Nitin Chaudhary (2015H149291P)

Student Write-up

Short Summary of work done during PS-II: Front end web development for OEM partners to view their sales related data.

Tools used (Development tools - H/w, S/w): bootstrap, jquery, D3

Objectives of the project: To have an interactive visualisation of data to the customer

Outcomes of the project: To have an interactive visualisation of data to the customer

Major Learning Outcomes: javascript, bootstrap, jquery implementation

Brief Description of working environment, expectations from the company: Good startup working enviroment with good work to do.

PS-II Station: J. P Morgan CIB-RFT, Bangalore

Student

Name: Sanjay Reddy S (2013A7PS189P)

Student Write-up

Short Summary of work done during PS-II: We had to create a dashboard (a means of visualization) for JPMC's data (especially related to their many projects going on) by processing and analysing it.

Tools used (Development tools - H/w, S/w): ELK stack, Java (for writing the back-end), Node JS, Angular JS (for implementing the front-end).

Objectives of the project: 1) Get data from myriad number of sources (like Jenkins, Bit-bucket etc).

2) Process them and push into ELK stack.

3) Create visualizations and display the data.

4) Make a user-friendly UI, so that it becomes easy to obtain key-insights into the data.

Outcomes of the project: We (along with the team) were successful in creating the web-platform upon which these visualizations are being displayed to various JPMC officials.

Major Learning Outcomes: We got to learn and experiment with ELK stack is a very popular Log-management platform. Writing code complaint with corporate standard guidelines was also a big take-away for me.

Brief Description of working environment, expectations from the company: The company is very good place to work at. One can get to learn a lot, especially if interested in this sort of Web-Development work. Extremely cooperative and knowledgeable managers/mentors. Independence is given to even interns. Although, one slight nitpick would be that not much Data Analytics/ML related work (as was mentioned in the PS-2 website) was present.

Name: Nikhil Bharadwaj Gosala (2013A7PS051H)

Student Write-up

Short Summary of work done during PS-II: Developed a dashboard for a real-time trading platform that will be used by many PMs in JP Morgan

Tools used (Development tools - H/w, S/w): Java, C#.NET

Objectives of the project: Analyze and develop a dashboard for a real-time trading platform.

Outcomes of the project: Created a framework, base and designed modules for the dashboard.

Major Learning Outcomes: Learnt how a corporate bank functions, various economic and financial terms and their use in the industry, how to design effective software development models and improve application development skills.

Brief Description of working environment, expectations from the company: Work timings are very flexible. Company treats you like an employee and expects you to contribute to the project just like any other good employee would do. People are ready to help and are always eager to explain new concepts and provide assistance.

Name: Swapnil Tyagi (2013A3PS182P)

Student Write-up

Short Summary of work done during PS-II: I had worked on a dashboard for the senior management and application developers to guage and analyze the infrastructure resources like IaaS, PaaS, Database services etc on their servers consumed by them, so that they can identify any production inefficiencies or free up any resource that may be not using anymore.

Tools used (Development tools - H/w, S/w): Qlikview, Splunk enterprise

Objectives of the project: Identify Production inefficiencies for applications.

Outcomes of the project: Automated Dashboard that can give application developers insight into their infrastructure spending.

Major Learning Outcomes: Operations and management of resources in large organisations. Technical knowledge in qlikview, splunk and python

Brief Description of working environment, expectations from the company: People here are extremely helpful and enthusiastic. Great environment to learn and grow as a developer.

Name: Prayag Godha (2013A3PS285P)

Student Write-up

Short Summary of work done during PS-II: Used various web-technologies to enhance the framework of the application.

Objectives of the project: To build and enhance an existing application

Outcomes of the project: Built many new features and updated existing short-comings.

Major Learning Outcomes: Learnt about Python, web-technologies and agile mode of development.

Brief Description of working environment, expectations from the company: It has been a great experience. The colleagues here are very supportive and helpful. I have learnt a lot from them.

Name: Akath Singh Dua (2012B4A7333P)

Student Write-up

Short Summary of work done during PS-II: The work involved implementation of various algorithms in machine learning and implementing a sentiment analysis module.

Tools used (Development tools - H/w, S/w): Anaconda, Pycharm and Spacy.

Objectives of the project: To implement machine learning algorithms to cater the business use case.

Outcomes of the project: A model used to predict sentiment of live news.

Major Learning Outcomes: We got to learn Python, tensorflow and Java script.

Brief Description of working environment, expectations from the company: The working environment is good but there's nothing for recreation. The mentor and manager are actively involved and have an open discussion with you and guide where ever you need help. The company especially the mentor and manager want that you complete your work within the given deadline. Prior knowledge of Python is a plus.

Name: Nikhil Bhale (2013A7PS154H)

Student Write-up

Short Summary of work done during PS-II: Our work was to create a proof of concept, for sentiment analysis. We created a deep learning model for predicting whether a sentence is positive, neutral or negative.

As a sample application we also build a news analysis web app. We also worked on other Natural language processing applications.

Tools used (Development tools - H/w, S/w): python, tensorflow and keras.

Objectives of the project: Sentiment analysis of financial data.

Outcomes of the project: A model which does 3-class sentiment classification with an accuracy of 70%.

Major Learning Outcomes: Deep learning, Web app development.

Brief Description of working environment, expectations from the company: Work is time sensitive. It is not heavy but effort is a requirement. Work hours are normal and expectations are a bit on the higher side. We got a really good mentor and manager. Overall, the environment is good and promotes productivity but lacks on recreational activities.

Name: Monisha Goyal (2013A3PS284P)

Student Write-up

Short Summary of work done during PS-II: Full stack development of UI.

Tools used (Development tools - H/w, S/w): Scala and Angular.

Objectives of the project: Replacing an already existing accounting database with JP Morgan's database

Major Learning Outcomes: Learned a new programming language Scala. Learned the working of different LOBs in JP Morgan.

Brief Description of working environment, expectations from the company: Amount of work isn't much, flexible working hours, high pay and relaxed life.

Name: Sanuj Bhatia (2013A3PS230P)

Student Write-up

Shot Summary of work done during PS-II: Created an analytics dashboard based on the ELK stack using in JavaScript, HTML and CSS using AngularJS and Bootstrap.

Tools used (Development tools - H/w, S/w): JavaScript, HTML, CSS, AngularJS and JQuery.

Objectives of the project: Objective was to integrate IT managerial and software development tasks by creating a dashboard view that provides an overall view of the initiatives being undertaken in the line of business and their current statuses.

Outcomes of the project: The dashboard was created leading to a successful DevOps environment being established in the company, where managers can be provided of an overall view of all related tasks of each initiative.

Major Learning Outcomes: Javascript, JQuery and AngularJS were the major learning outcomes on the web development aspect of the project.

Brief Description of working environment, expectations from the company: There were daily calls for catching up with team members and everyone is expected to produce some ideas or showcase concrete results of the previous day's work.

PS-II Station: JDA Software Solutions, Bangalore

Student

Name: Varun Bajpai (2012B1A1703G)

Student Write-up

Short Summary of work done during PS-II: Worked on python3 for performance testing and manual testing.

Tools used (Development tools - H/w, S/w):python3.

Objectives of the project: Supply Chain Strategist.

Major Learning Outcomes: python3.

Brief Description of working environment, expectations from the company: Excellent Company and Great Management very fine place to work with.

Name: Prateek Agarwal (2013A2PS585H)

Student Write-up

Short Summary of work done during PS-II: I joined my intern at JDA Software (Bangalore) as Product Development-Intern. I was fortunate enough to work on JDA Connect projects which was completely new project, helped me grow as an engineer by developing my core skills and knowledge. This was a great opportunity for me to bring my coding standards at par with the essional world.

I was given opportunity to work on Front end development of Connect Product. I Developed few SPA UI using ExtJS framework and also worked on JS UnitTesting, UI Automation and Jenkins etc.Very thankful to BITS Pilani for providing me this oppurtunity. It most certainly helped in having a clearer picture of what to aim for in the future and the mentoring and contacts made through this program are more valuable than anything else.

Tools used (Development tools - H/w, S/w): ExtJs, JQuery, Jenkins, SinonJs, MochaJs, Fitnesse and AJAX

Objectives of the project: Front end Development of JDA Connect including JS Unit Testing and UI Automation.

Outcomes of the project: Developed few single page applications UI for handling lacs of records to sustain high traffic data management for JDA Connect.

Integrated the application to JDA's Connect server using REST to access JSON data by making AJAX calls from client side.

Carried out quality assurance tests like JS Unit Testing using SinonJs and UI Automation using Fitnesse framework to discover errors and optimize usability.

Major Learning Outcomes: Learnt Javascript Frameworks like ExtJS, AngularJs. JS Unit Testing using MochaJs and SinonJs, UI Automation using Fitnesse and JDA's Selenium drivers. Jenkins etc.

Brief Description of working environment, expectations from the company: JDA Software have very good working environment.Good Work & life Balance, Great place to learn new things.Very Helpful Mentors.

PS-II Station: JDA Software Solutions, Hyderabad

Student

Name: Ankush Paul (2012B5A1491G)

Student Write-up

Short Summary of work done during PS-II: I'm part of Enterprise Store Operations (ESO) Product Development Team as their Quality Tester. My responsibility during my internship includes functional testing for the product in case any changes were made either during development or as part of defect fixing, security testing and automating testing scenarios.

Tools used (Development tools - H/w, S/w): JAVA, Eclipse, Selenium, Cucumber, IBM AppScan and JIRA

Objectives of the project: Software Testing

Outcomes of the project: Learned the various standard practices and measures undertaken by product based software companies. Also how product security is ensured to prevent leak of clients confidential data.

Major Learning Outcomes: An overview working in IT sector, hands on with various industry standard tools. Experience of working as a Quality Tester and Security Tester.

Brief Description of working environment, expectations from the company: Work environment is good, your personal space is respected. Employees in general are cheerful and approachable in case of any problem. One of the major plus point is the work life balance, timing is very flexible and work related pressure is moderate. Honestly, can't think of any cons regarding work environment.

To be honest, I didn't had any expectation before joining this company, but I was pleasantly surprised with quality of work I was offered from the start. I was treated as a full time employee would be and was given similar responsibilities.

Name: Nikhil Pradeep Warang (2013A3PS014G)

Student Write-up

Short Summary of work done during PS-II: Creating & testing batch scripts & sql scripts for the product environment & automation.

Tools used (Development tools - H/w, S/w): Toad for oracle, Git, Windows batch programming, Jenkins.

Objectives of the project: To create new environment & jobs through Jenkins based on the previous version of the product & run all test cases & support the development team.

Major Learning Outcomes: Learning Java & how to write scripts & to solve the defects.

Name: Mukesh Reddy V (2012B1AB746H)

Student Write-up

Short Summary of work done during PS-II: Mostly Worked on Configuration Management tools like BitBucket, Jira, Jenkins and looking after their requests, nothing great.

Tools used (Development tools - H/w, S/w): BitBucket, Jira, Jenkins, putty.

Objectives of the project: Development and Support the CM Team and learn their way of doing things.

Outcomes of the project: Learned the above mentioned tools and nothing much.

Major Learning Outcomes: Got an Understanding of how the IT sector, Service based companies and Product based companies work.

Brief Description of working environment, expectations from the company: Working Environment is not that great, it's a mainstream office with 3 floors and a cafeteria, it is a company for people who are looking to settle and definitely not for freshers as they learning curve is not so good.

PS-II Station: KPIT Technologies, Bangalore

Mentor

Name: Navin Kalappa

Designation: Head – Design

Comments: Found the students suitable for the work.

Faculty

Name: S.Raghuraman

Comments: Students are expected to be punctual, self disciplined, well mannered, having tolerance to ambiguity, willing to express themselves besides technical skills that BITS is imparting. PS-II intern is supposed to settle down quickly and contribute to the organization in short notice.

Student

Name: Paul Varghese (2013A7PS115H)

Student Write-up

Short Summary of work done during PS-II: Development of Open source platform for simulation of vehicle body systems. My part is to work on the visualisation and user input interface. This platform can import any model that can be animated using Python code which when integrated to plant model would give out a proper simulation with visualisation of that same model.The accuracy depends on the accuracy of the plant model itself. Software being open source is free for further development.

Tools used (Development tools - H/w, S/w): OpenModelica, PyCharm, Inventor and PythonOCC.

Objectives of the project: To create an open source simulation platform to run vehicle body system algorithm.

Outcomes of the project: Just as expected and even better. A powerful Python platform that can run C algorithm for plant model. It can take up any model and run simulation for the same with visualisation capabilities.

Major Learning Outcomes: Python, OpenModelica

Brief Description of working environment, expectations from the company: KPIT is a service based company.The major customers are from automotive domain.The company serves their customers on their embedded systems requirement. Inspire of being a relatively small company, the work they do are worth getting hands into. For a fresher, it's an excellent space for learning new and emerging technologies. They also work with tier one companies which means greater exposure.

PS-II Station: Leap Consulting, Trivandrum

Student

Name: Aravind M (2015H149283P)

Student Write-up

Short Summary of work done during PS-II: Conducted internal auditing of a construction company for 3 quarters of 2016 and first quarter of 2017. Prepared revenue model and projections for manufacturing firm and prepared their project report. Budgeting of a hotel.

Tools used (Development tools - H/w, S/w): Tally, Excel, Word, Power point.

Objectives of the project: Conduct the internal audit and obtain results of any fraudulent activities was there, provide them with cost cutting methods in order to improve their profits. Putting forward a effective budget for a hotel. Preparing a revenue model and project report for a manufacturing firm.

Outcomes of the project: The internal audit was completed and no fraudulent activities was discovered. The budget model for the hotel was approved and awaits further process.

Major Learning Outcomes: Cash Flow and Fund Flow analysis, financial modelling, Tally operation, basics of accounting, vouching, internal auditing.

Brief Description of working environment, expectations from the company: The work environment and culture is quite relaxed and flexible and one of the benefits of working for a startup like leap is that we will have a hands on experience of various projects which are being undertaken by them. The mentors assigned to us are also welcoming and beneficial in nature and fully supportive.

PS-II Station: MathWorks India Private Limited, Bangalore

Faculty

Name: Dr. Satya Sudhakar Y

Comments: Expectations from industry:

Mathworks: Matlab

Student

Name: Astarag Chattopadhyay (2015H140023G)

Student Write-up

Short Summary of work done during PS-II: Test infrastructure system here in MathWorks consists of multiple host computers connected through a network. Also different hardwires can be connected to the infrastructure over the network to run different tests. One such hardware is the robotic toolkit Lego MindStorm EV3 which runs linux and has a powerful ARM processor. The goal of my project was to ensure single access to the hardware by designing a locking mechanism. I got an exposure to network programming (Tcp-Ip), selecting tool chain for development and cross-compilation. Also I have used C code as well as MATLAB class for the implementation.

Tools used (Development tools - H/w, S/w): Matlab, Linux, gcc, EV3_IDE.

Objectives of the project: Ensuring single access to Lego MindStorm EV3 by designing a locking mechanism in a test infrastructure connected over a network.

Outcomes of the project: The locking mechanism which can now be extended to other hardwires.

Major Learning Outcomes: I got an exposure to network programming (Tcp-Ip), selecting tool chain for development and cross-compilation. Also I have used C code as well as MATLAB class for the implementation.

Brief Description of working environment, expectations from the company: Working environment is really good and supportive. You will get pointers to the right direction and also can approach anyone for help at any point of time. In this project the expectation was the implementation of the basic locking mechanism which can be modified further to account for the corner cases.

Name: Gaurav Ahuja (2015H140024G)

Student Write-up

Short Summary of work done during PS-II: Processor-In-Loop (PIL) is a very important functionality that is supported by MathWorks product that decreases the prototyping time and time to market, which is one of the important goals of the company. PIL functionality is supported by almost all major industrial hardwires used in prototyping and producing products that cover a wide variety of domains. The hardware list includes the boards from STMicroelectronics, Texas, NXP, etc. In a PIL simulation, the generated code runs on target hardware. The results of the PIL simulation are transferred to Simulink to verify the numerical equivalence of the simulation and the code generation results. The PIL verification process is a crucial part of the design cycle to ensure that the behavior of the deployment code matches the design. The project work includes coming up with and formulating formal guidelines that can be followed in future by all developers to test the PIL functionality. It also includes writing dedicated automated test for STM32 Nucleo boards for which there is not any automated tests existing to test the integrity of PIL functionality.

Tools used (Development tools - H/w, S/w): MATLAB, Simulink, STM32 Nucleo F411RE, STM32 Nucleo F401RE and Arduino Mega ADK.

Objectives of the project: Design an automated shared test for Processor-In-Loop functionality.

Outcomes of the project: PIL could be automated tested for 17 new hardwires with ease.Time taken to write a PIL test for specific hardware using the shared test class is less than 2 hours as compared to the time it took earlier which was around 1-2 weeks.

Major Learning Outcomes: Programming with MATLAB Classes, Unit Test Class, Build and Test (BaT) system, Processor-In-Loop functionality.

Brief Description of working environment, expectations from the company: Work environment is excellent. People are very helpful and easy to approach. The environment at Mathworks promotes learning.

PS-II Station: Media Iq Digital, Bangalore

Mentor

Name: Sarika Kumari

Designation: Business Analyst, Analytics at MiQ Students are sincere in their work. The assigned works are completed in time. They have good technical knowledge and many of them have completed the assigned tasks without seeking much help. Many students have done significant contributions to the ongoing campaigns and live projects. The qualities required in an intern include - being a good listener, team player, problem solver, innovator apart from the technical qualities.

Faculty

Name: Dr. Satya Sudhakar Y

Comments: Expectations from industry: Media IQ Digital is an analytics & RnD company, founded in 2010 and headquartered at UK. The works involve collecting and processing large amount of data, modeling data to convert it into insights, and then converting them into actionable insights for a variety of products and services. This makes data valuable, helping clients engage more customers and accelerate their growth. The different departments for which students were allotted include Campaign Analytics, Tech and Business Intelligence. Basic programming knowledge and analytical skills are the pre-requisites for Campaign Analytics interns. Knowledge in SQL, Excel, big data techniques and ability to adapt to new platforms/tools is an added advantage for the other two streams of work. Other requirements included being a quick learner, innovator, team player and problem solver. It is suggested that the students should connect with their peers/seniors who have completed the PS-II program at their allotted stations previously to know about the kind of work and the industry expectations. The quest to learn new things and to see things learnt in classes work in practice is a key motivating factor for better contribution towards the projects.

Student

Name: Abhishek Kumar (2013A1PS506P)

Student Write-up

Short Summary of work done during PS-II: Company handles data to predict the buying pattern of customers. My work was to arrange the data in presentable manner using tableau and other tools and handle the backend data which is used in making dashboards.

Tools used (Development tools - H/w, S/w): Tableau, SQL workbench, S3 browser.

Objectives of the project: Create Dashboards for company and clients.

Outcomes of the project: Made various dashboards.

Major Learning Outcomes: Learnt a lot about Database management.

Brief Description of working environment, expectations from the company: Friendly environment with professional people. A lot to learn from their experience.

Name: Rohan Garg (2013A8PS854G)

Student Write-up

Short Summary of work done during PS-II: Running campaigns for various companies as part of digital media advertising. Campaign optimization based on various target strategies and creation of insight reports comprises the major work.

Tools used (Development tools - H/w, S/w): Appnexus, Google Double click bid manager, SRS, DPI manager.

Objectives of the project: Running digital advertising campaigns for various companies effectively and efficiently to bring out best benefits and profits. Scope is limited to digital media advertising (web serving) and is limited to high income countries where it is more expected to get webpage conversions from economically potential population.

Outcomes of the project: Campaign profits.

Major Learning Outcomes: Working of Analytics tools.

Brief Description of working environment, expectations from the company: Working environment is good, friendly people around.

Name: Kulkarni Sai Abhay (2012B2A4640G)

Student Write-up

Short Summary of work done during PS-II: I worked in BI team. My work was mainly on Standard Reporting System (SRS) user interface.

Tools used (Development tools - H/w, S/w): HIVE, SQL and GIT.

Objectives of the project: Project was mainly to decrease efforts of analysts and traders. Make their work easier.

Outcomes of the project: I have added twelve new reports to SRS UI and some new dimensions, metrics, primary and secondary filters to SRS.

Major Learning Outcomes: I learnt HIVE, SQL, GIT and basics of digital marketing.

Brief Description of working environment, expectations from the company: Working environment is good in Media IQ. Company is growing so there are chances to learn new things, software and techniques.

Name: Ankit Raj (2013A1PS556P)

Student Write-up

Short Summary of work done during PS-II: Major focus was on development operations related to handling requests from clients or data scientists in enterprise team.

Tools used (Development tools - H/w, S/w): Jenkins (shell scripting), AWS, SQL, Postman, Eclipse (java)

Objectives of the project: Client related tasks similar to job. No project as such.

Major Learning Outcomes: Gained good knowledge of Shell bash, java, SQL, cloud computing, linux environment as well as enterprise side of the company.

Brief Description of working environment, expectations from the company: Chilled out environment, flexible working hours, friendly and qualified people, no cubicles, library, foosball etc. will surely be a good learning experience in either tech, BI or analyst (mine was tech).

Name: Ashwin Sahay (2012B2A8633G)

Student Write-up

Short Summary of work done during PS-II: Worked on Big data analysis.

Tools used (Development tools - H/w, S/w): HIVE, HADOOP, and MS EXCEL.

Objectives of the project: To generate insights from data.

Outcomes of the project: prepared automated insight reports after analysis.

Major Learning Outcomes: Technologies-hive, sql , MS excel, Hadoop.

Brief Description of working environment, expectations from the company: good Company with Li8e work.

Name: Kaveri Singh (2012B2A1621P)

Student Write-up

Short Summary of work done during PS-II: This is a digital advertising firm. The work was mostly related to data analytics. I worked with Europe campaign analysis team. I worked on targetingaudiences and digital advertising campaigns. Primarily, the focus was on optimizing campaigns and pre/mid /post campaign Insight Reports in addition to weekly insights.

Tools used (Development tools - H/w, S/w): Software tools - Excel, Sql, R, and PowerPoint

Objectives of the project: The work was dynamic. The objective of every advertising campaign was to optimise the key performance parameters and produce valuable insights

Outcomes of the project: Successfully completed various insights, optimized advertising campaigns, attended to sales requests, learnt Sql, basics of R and advanced functions in Ms Excel

Major Learning Outcomes: Learnt about working of digital advertising industry, business models, learnt Sql, basics of R and advanced functions in Ms Excel

Brief Description of working environment, expectations from the company: The work culture was good, team is young and supportive. Work is hectic since it's a start up but lot of opportunities to learn

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Name: Nancy Nigam (2012B1A3646G)

Student Write-up

Short Summary of work done during PS-II: Worked for the enterprise team and on the products build and used by media IQ team. Mostly data source integration using Java, Vertex, REST, React and Amazon web services like S3 and resift.

Tools used (Development tools - H/w, S/w): Java, Reshift, S3, Vertex, REST, SQL, React, and Bash

Objectives of the project: Data gathering (from clients, Facebook, Google, instagram, LinkedIn etc), integration and processing for BI team to draw insights and for analysis.

Outcomes of the project: Data processed by our team is used by BI and analysts teams for their analysis.

Major Learning Outcomes: Worked on various technologies so got to learn about them along with the industrial experience.

Brief Description of working environment, expectations from the company: Working environment is pretty decent and time is given to learn at your own pace. Not much work pressure but definitely a place to learn a lot. Work from home is available along with free food and cab at very nominal rates. Overall an excellent place to work.

Name: Sameera Kodi (2012B1A3620G)

Student Write-up

Short Summary of work done during PS-II: I worked with the Business Intelligence team where I developed interactive Dashboards reports insights from the campaigns run. I worked on both the internal BI tool and tableau to develop these dashboards which were used by analysts to optimise their future campaigns accordingly.

Tools used (Development tools - H/w, S/w): SQL workbench, Tableau, Internal BI tool of Media IQ.

Objectives of the project: To create interactive Dashboards.

Outcomes of the project: Interactive Dashboards to optimise campaign stratergies.

Major Learning Outcomes: Ability to model huge data and make useful insights out of it.

Brief Description of working environment, expectations from the company: Media IQ Digital has a very good work culture. Everyone in the company is focused enough to reach their respective targets. Everyone is very approachable and helpful. The company as a whole has a very young and vibrant aura about it. It is a good company to kick start your career if interested in data analytics.

Name: Kartikeya Tiwari (2012B2A4613G)

Student Write-up

Short Summary of work done during PS-II: The work was in digital adversiment analytics. There were two major tasks 1- campaign Optimization 2- Insight reports Campaign Optimization was optimizing the campaigns to meet the client ROI and to churn out max margins. Insight reports was to build a story from the user data we collect so as to find the major findings to be present to the client.

Tools used (Development tools - H/w, S/w): MS Excel SQL Hive PowerPoint R (not much used) Internal Tools (MiQ).

Objectives of the project: Campaign Optimization.

Outcomes of the project: Several Campaigns were optimized to meet the clients RIO, and intern the margin was maximized.

Major Learning Outcomes: Analytical Thinking, tools used in analytics, soft skills.

Brief Description of working environment, expectations from the company: The work culture is similar to a start up. Teams generally begin the days at around 10:30 am and a normal day ends at around 7-7:30 pm. At MiQ we work on live projects from the very beginning. The training period lasted around 10 days. Which included sessions on business context, Excel, PowerPoint and Sql . In a period of 6 months you can expect to learn basics of analytics. The company does provide free breakfast and lunch. Also they do provide cab service on minimal charges.

PS-II Station: Merilytics, Hyderabad

Student

Name: Anshul Agrawal (2013ABPS729P)

Student Write-up

Short Summary of work done during PS-II: My project involved sales forecasting for the American operations of an FMCG company. It required monthly forecasting based on inputs such as ACV, PPD, Seasonality, Cannibalization, Market Growth etc collected from the Regional Sales Managers. Price forecasting was also done based on inputs from Regional Sales Managers for various strategies such as EDLP, Fixed, Hi-Low etc.

Tools used (Development tools - H/w, S/w): Primarily Excel and VBA were used for the entire process. We later shifted to R as some parts of the project needed to be revamped.

Objectives of the project: Monthly Sales Forecasting of FMCGs.

Outcomes of the project: Monthly Sales Forecasting of FMCGs.

Major Learning Outcomes: Proficiency in Excel, VBA and R. Brief but insightful glimpse into the world of data analytics**.**

Brief Description of working environment, expectations from the company: Its a rapidly growing startup, so there are nearly 80-100 employees. One can quickly learn the various tools associated with the project such as Excel or SQL. From the first day, they treat you as an employee. So you get assigned a project quickly and soon shoulder the responsibility of deliverables. The work hours are long and you may need to work on some weekends.

PS-II Station: Mol De Analytics, Hyderabad

Student

Name: Manchala Pavani (2012B4A3530H)

Student Write-up

Short Summary of work done during PS-II: Creating four different WebPages which are incorporatedinto a app

Tools used (Development tools - H/w, S/w): Angularjs, node.js, plunk.

Objectives of the project: Creating webpage for app.

Outcomes of the project: Creating webpage for app.

Major Learning Outcomes: Html, css and javascript.

Brief Description of working environment, expectations from the company: Good working environment, PPO chances are less.

Name: Tadrish Kumar Singh (2012B1A2808P)

Student Write-up

Short Summary of work done during PS-II: Web development (both front-end and back-end).

Tools used (Development tools - H/w, S/w): AngularJS, Node.JS.

Objectives of the project: Startup (so can't declare).

Outcomes of the project: can't declare.

Major Learning Outcomes: Full stack web development.

Brief Description of working environment, expectations from the company: Decent working environment with all the tools provided and regular food. The expectations are not much since i don't need a PPO.

Name: T. Sreevardhan Reddy (2012B1AA930H)

Student Write-up

Short Summary of work done during PS-II: Front end web development.

Tools used (Development tools - H/w, S/w): Angular JS, HTML, and CSS.

Objectives of the project: Create web pages for their new product.

Outcomes of the project: New WebPages with front end design as specified.

Major Learning Outcomes: Got to work with front end development technologies like Angular JS.

Brief Description of working environment, expectations from the company: No work pressure. No real work as such. Not a challenging environment. The scenario might change next semester or the PS program might be cancelled also as they don't have any need for interns.

PS-II Station: Mordor Intelligence, Hyderabad

Student

Name: Pranav Kumar S (2015H149253P)

Student Write-up

Short Summary of work done during PS-II: 1.Design, develop and maintain the recruitment process in the organization. 2. Identify sources and channels of recruitment (Internal Referrals and External pitch on LinkedIn, opportunity) 3.Define and streamline recruitment process based on designation (HR, Marketing Associate, and Research Profiles). 4. Collaborate with third party Job portals, Pitch colleges across India for different domains/verticals.5.Collaborate with HR consultants for recruiting senior resources.6.Analyze the current performance appraisal process and define new metrics 7.Interact with team leads to identify and segregate Associate, Analyst, Senior Analyst and team activities (To assist in identifying employee hierarchy) 8.Assist in new employee on-boarding, payroll process and pay scale negotiations. 9. Define Time sheet policy, Automate attendance management, and collaborate with third party software to automate payroll process and basic HR.

Objectives of the project: HRM and Automations

Outcomes of the project: Streamline and automate HR activities

Major Learning Outcomes: 1.Design, develop and maintain the recruitment process in the organization. 2.Identify sources and channels of recruitment (Internal Referrals and External pitch on LinkedIn, opportunity)3.Define and streamline recruitment process based on designation (HR, Marketing Associate, and Research Profiles).4.Collaborate with third party Job portals, Pitch colleges across India for different domains/verticals.5.Collaborate with HR consultants for recruiting senior resources.6.Analyze the current performance appraisal process and define new metrics 7.Interact with team leads to identify and segregate Associate, Analyst, Senior Analyst and team activities (To assist in identifying employee hierarchy) 8.Assist in new employee on-boarding, payroll process and pay scale negotiations. 9. Define Time sheet policy, Automate attendance management, collaborate with third party software to automate payroll process and basic HR.

Brief Description of working environment, expectations from the company: Mordor Intelligence LLP is a market research and consulting firm with expertise in accurate research and analysis. Mordor

Intelligence generates more than 9000 comprehensive reports annually across 60+ industry segments and are trusted by 300+ brands across the globe - Schneider, Texas Instruments, Nokia, Hitachi too name a few. The industry segments in which Mordor Intelligence researches and provides consulting include Agriculture, Feed, Automotive, Aerospace and Defense (FAAD), Chemicals & materials (CNM), Energy & Power, Food & Beverages (FNB), Healthcare and Information and Communication Technology (ICT). Mordor Intelligence serves clients across US, UK and Asia Pacific. Work culture: Young talent, open to ideas & discussions Expectations: To let the general management interns (BITS MBA) explore domains other than HR such as consulting, research, business development and digital marketing.

Name: Priyanuj Deka (2012B4A4745G)

Student Write-up

Short Summary of work done during PS-II: Prepared market research reports and report samples as required by the department. Conducted secondary and primary research in the process of preparing reports.

Tools used (Development tools - H/w, S/w): MS excel.

Objectives of the project: To write report samples, company profiles for custom reports, modify data sheets and prepare write up segments of reports.

Outcomes of the project: Completed all given targets.

Major Learning Outcomes: Learnt how to conduct secondary and primary research.

Brief Description of working environment, expectations from the company: Working environment is very friendly and encouraging. It is very easy to get assistance in any aspect. All levels of employees are very approachable. Expectations from the company are basic and as per trainee's competence.

Name: K Snigdha (2015H149290P)

Student Write-up

Short Summary of work done during PS-II: Taking interviews, negotiating compensation expectations, End-to-end recruitment, On boarding, Induction of new joinees.

Objectives of the project: To assist the mentor in taking the now 150-employee organisation to 300 employee organisation.

Outcomes of the project: Helped the organisation hire 20 full time employees

Major Learning Outcomes: Spontaneity, Handling interviews, Compensation Negotiations

Brief Description of working environment, expectations from the company: The organisation is a flat and flexible organisation. Being here was quite a pleasant working and learning experience.

Name: Manasvi Nandwana (2013A1PS657G)

Student Write-up

Short Summary of work done during PS-II: Contributing to samples and reports by searching information over internet. The work does not require much of intelligence**.**

Tools used (Development tools - H/w, S/w): MS Word, Excel, and PowerPoint.

Objectives of the project: To make reports and samples.

Outcomes of the project: Reports and samples.

Major Learning Outcomes: Learning outcomes are close to nil. Most of the projects involve google search as a primary exercise which does not contribute to existing knowledge base.

Brief Description of working environment, expectations from the company: Work environment is good. Timings are flexible. No dress code.

Name: Ashwin Kuruvilla (2012B2A2321P)

Student Write-up

Short Summary of work done during PS-II: My project was mainly based on analytics in terms of market research. I helped the company in preparing reports by assisting in the research analysis and final compilation part.

Objectives of the project: Market Research and Analysis.

Outcomes of the project: A compiled market report for the client base.

Major Learning Outcomes: Word, Excel and Analytical Skills.

Brief Description of working environment, expectations from the company: The stint in the company has in its own way helped to increase my analytical skills and also opened a new door to the corporate world. On top of this the company has helped to improve my verbal ability by providing opportunity to take on international client calls as a part of primary research done for the completion of the report. Other gripping insights to corporate life were shared for our future.

Name: Duppalli Dheeraj Yadav (2013A2PS497H)

Student Write-up

Short Summary of work done during PS-II: The work done in Mordor intelligence is Market Research. We need to make various reports on different markets. The reports are sometimes custom made for the requirement of the clients. The main objective of the report is to give the required Market definition, Market overview, Market dynamics which includes the drivers, restraints, and opportunities, Market segmentation which is based on the product type (By type and by function), application type, the company profiles of the major industry players, and the competitive landscape. The research is done on the market by analyzing the information using various methods. Methods such as analyzing the production, consumption data, import export data, and in some cases, the no of products for a particular category can also be used to find the market share.Market segmentation which is based on

the product type (By type and by function), application type, the company profiles of the major industry players, and the competitive landscape. This is done using the market share analysis.

Tools used (Development tools - H/w, S/w): Tools used are MS Excel, MS Word, Google Chrome, Data base websites like FAO Stat, Statista, and Factiva.

Objectives of the project: The main objective of this project is to find out the market insights from Secondary and Primary Research. The scope of the project is to give the required Market definition, Market overview, Market dynamics which includes the drivers, restraints, and opportunities, Market segmentation which is based on the product type (By type and by function), application type, the company profiles of the major industry players, and the competitive landscape. The report includes the data analysis and deduction of the respective areas of interest and also the qualitative analysis.

Outcomes of the project: The outcome of the project is the report which consists of full detailed information on a particular market. The report contains Market definition, Market overview, Market dynamics which includes the drivers, restraints, and opportunities, Market segmentation which is based on the product type (By type and by function), application type, the company profiles of the major industry players, and the competitive landscape. The report includes the data analysis and deduction of the respective areas of interest and also the qualitative analysis.

Major Learning Outcomes: The learning outcomes are I learned to use excels to analyse the data. Search for market related information over the internet and interpret it to find the relevant information. Write information on various segments of the report by analyzing it.

Brief Description of working environment, expectations from the company: The working environment is really good. People in the office are very friendly and helpful. There is no restriction on dress codes and office timings are flexible. The company expects the students to have good writing and analytical skills. The students should be good in using excel, word and browsing internet.

Name: Priyanuj Deka (2012B4A4745G)

Student Write-up

Short Summary of work done during PS-II: Market research and analysis, secondary research, primary research. Prepared company profiles as a part of report writing process.

Tools used (Development tools - H/w, S/w): Ms excel.

Objectives of the project: To prepare company profiles of syndicated reports via secondary and primary research.

Outcomes of the project: Prepared samples for various reports, company ‘profiles and various other tasks as per requirement.

Major Learning Outcomes: Learnt how to prepare and research for market research reports, how to perform secondary and primary research.

Brief Description of working environment, expectations from the company: Working environment is very friendly, employees andmentors are easily approachable and eager to help.

PS-II Station: MSCI, Mumbai

Student

Name: Pratul Agarwal (2012B3A3606H)

Student Write-up

Brief Description of working environment, expectations from the company: The work environment is extremely professional. QER is one of the best and most exclusive teams in MSCI. Your peers will all be seniors, mostly from IITs and MBAs from top IIMs/ISB, with CFA. The work hours are chill; you'll be mostly expected to work for 8-10 hours a day at max. Timings are flexible. Some people arrive at 9, and leave early by 5/6. Others arrive by 11/12, and leave by 8/9. So it'll mostly be at your convenience, as long as you're delivering what's expected of you. The team members are extremely helpful, which makes the overall environment very productive.

Name: Siddhant Agarwala (2013A4PS271P)

Student Write-up

Short Summary of work done during PS-II: Considering MSCI as a financial services company, I expected some applications of my finance electives; however my work was more on the technical side. It involved building risk reports using XML and HTML software.

Tools used (Development tools - H/w, S/w): XmL, HTML.

Objectives of the project: Blue box reporting.

Outcomes of the project: Business as usual work, risk report development.

Major Learning Outcomes: Use of XML and HTML software.

Brief Description of working environment, expectations from the company: Management is good. Work timing is flexible and very good canteen.

Name: Dhairik Fuletra (2013ABPS481P)

Student Write-up

Short Summary of work done during PS-II: My work involved developing a framework for automation of rebalancing of MSCI indexes. I also worked on the research by analysing different value strategies and devising an improvised methodology for better returns.

Tools used (Development tools - H/w, S/w): Matlab, SQL and VBA.

Objectives of the project: Automation of Mock Rebalancing.

Outcomes of the project: Reduced the 15min manual activity to a 1min code.

Major Learning Outcomes: Better insights on different investment strategies. Better insights in market opinions.

Brief Description of working environment, expectations from the company: Amazing team Great culture Flexible timings Good manager

PS-II Station: My POS Technologies Pvt. Ltd., Mumbai

Student

Name: Pratul Agarwal (2012B3A3606H)

Student Write-up

Short Summary of work done during PS-II: Java Spring Web application to consume Restful service in order to sync data between servers. Web Scraping in Python using Selenium browser automation tool. RabbitMQ message queues for publish/subscribe application. AWS deployment management, writing scripts to manage EC2 instances, awscli to manage S3 buckets. Wrote REST API's in Python's Django framework for Master Data Management (MDM) application.

Tools used (Development tools - H/w, S/w): Java, Python, Selenium, RabbitMQ, AWS, Django and spring.

Objectives of the project: Web Scraping, AWS deployments and managing, MDM, Spring App.

Outcomes of the project: Scraped essential data for the company and incorporated into company's Master Data. Contributed to the MDM by writing API's for the data.

Major Learning Outcomes: Start-up culture, building software as a service for industry at large.

Brief Description of working environment, expectations from the company: Working environment is not so great for a start-up. Feels more like a corporate than a start-up. But I hope things change, because many of the staff is really good and the management needs to realise this and cater to their needs a bit, like atleast shifting to a pleasant office and having a consistent and high speed internet connection (currently office in an industrial estate building!). Work is good no doubt and the company will be willing to give you (more/better) responsibilities, only you need to ask.

PS-II Station: NetApp, Bangalore

Student

Name: Shilpa Kumar (2015H103015G)

Student Write-up

Short Summary of work done during PS-II: Use ONTAP performance log data to derive a performance anomaly signature to characterize system performance and detect anomalies. Implemented Feature Selection algorithm to perform dimensionality reduction on dataset. Used linear regression model to predict CPU utilization. Developed rest API for Feature Selection algorithm to use as macro function.

Tools used (Development tools - H/w, S/w): Python, R.

Objectives of the project: Use ONTAP performance log data to derive a performance anomaly signature to characterize system performance and detect anomalies.

Outcomes of the project: Identified linear relation between performance log data and CPU utilization.

Major Learning Outcomes: Application of Machine Learning Technique in Performance analysis use cases.

Brief Description of working environment, expectations from the company: Comfortable environment to work. Good guidance from managers and mentors. Events conduct to showcase work done by interns.

Name: Shilpa Sarat (2015H103019G)

Student Write-up

Short Summary of work done during PS-II: Automation for the new product developed in the team.

Tools used (Development tools - H/w, S/w): Perl Scripts.

Objectives of the project: Core functionality testing and Regression analysis.

Outcomes of the project: Found several product bugs and regressions. Code checked into the production.

Major Learning Outcomes: Development life cycle of a new product development. Idea about the Testing scenarios needed to be taken care and also Timeliness.

Brief Description of working environment, expectations from the company: Working environment was really good and team and team mates being quite friendly and helpful in all situations even when work was bit challenging at time their timely help helped to accomplish the goal within deadline.

Name: Dhruv Krishnan (2013A7PS047G)

Student Write-up

Short Summary of work done during PS-II: Worked on areas involving deduplication, cryptography and data security in the cloud. Designed a solution architecture that reduplicates encrypted data in the cloud, which is a prevalent problem in academic literature regarding data security. First, the problem to be solved was formulated and then I researched techniques in research papers that would be applicable in solving the problem. The architecture was designed on the basis of the research work. A proof of concept implementation was done along with experiments based on that implementation.

Tools used (Development tools - H/w, S/w): Python and its libraries, software related to data security, Docker.

Objectives of the project: Design an architecture which solves the secure deduplication problem, which aims to deduplicate encrypted data in the cloud. Also make a proof of concept implementation and produce results based on the implementation.

Outcomes of the project: Designed architecture to solve the secure deduplication problem and finished a proof of concept implementation along with results based on the implementation to prove the practicality of the proof of concept.

Major Learning Outcomes: 1) Formulating a problem that is to be solved along with what goals to achieve. 2) Research of existing techniques that are applicable to the problem to be solved. 3) How to present a research oriented project at each point of its life cycle.

Brief Description of working environment, expectations from the company: The working environment is very relaxed and the company allows employees to have flexible work hours. NetApp trusts the employees to do their work and hence does not push employees to be at the office for a fixed number of hours. The employees can spend time at the office between any timing, according to their lifestyle and can take work from home if they are not required to be in person at the office (can also attend meetings through video conference). The work life balance is excellent. The company has some sort of event or competition nearly every week.

PS-II Station: NextGen PMS Pvt. Ltd, Bangalore

Faculty

Name: Mohammad Saleem Bagewadi

Comments: Expectations from industry: I express true gratitude for the contributions made by the students and an understanding that these contributions were critical and exclusive to each individual. Industry mentors had wonderful capacity and the opportunities they gave to our students, helped to build strength and character. I asked students to be proactive in thinking before performance issues develop, I would like to put on record that because of hard work and inter personal skills and efforts that students have put in to make the project to a great success.

Appreciate the great organizations, where general willingness to learn did not go unnoticed. I want to take a moment to share an incident, where the students were asked to develop the features that are critical to the customers. They didn't disappointed; they understood highly complex innovations in very short span of time and delivered good quality code. Great Job, it means you've made a difference.

Student

Name: Shubham Arora (2012B3A7522P)

Student Write-up

Short Summary of work done during PS-II: ● Strategy o Go-to-market strategy: Sketch out how, when and by what media will the product be delivered to the end customer, whilst keeping competition at bay. O Customer engagement strategy: Developing strategies to ensure usage on the platform and the delivery of value to the end customer. • Feature Definitions O Definitions: Define new features after interviewing all stakeholders for their needs and wants and post requirements to the p3 technology platform development team. • Testing – Testing new and upgraded features in a controlled environment before the product is pushed into production. • Product Analytics – Analytics enables the product manager to track how the product is being used by its users.

Tools used (Development tools - H/w, S/w): MS Word, PowerPoint, Excel, Adobe Photoshop, Good era Enterprise, Partner, and People.

Objectives of the project: Launch of p3Partner, p3Corporate - Grants Management System.

Outcomes of the project: NextGen saw the launch of its technology platforms.

Major Learning Outcomes: Product Management, Analysis, Design Thinking, Presentation.

Brief Description of working environment, expectations from the company: Everyone is really helpful.

PS-II Station: Nucleus Software Export Ltd, Noida

Faculty

Name: Ritu Arora

Comments: Expectations from industry: Nucleus Software, Noida: Mostly interested in taking students of EEE and related streams, with software skills. Students should prepare themselves for Java programming and related technologies. Good chances of PPO on clearing of a written examination. Company is highly interested in absorbing Bitsians.

Student

Name: Sohit Patel (2013A3PS413H)

Student Write-up

Short Summary of work done during PS-II: Mostly on technologies related to spring, Hibernate, NodeJS, AngulaJS, JQuery, Java.

Tools used (Development tools - H/w, S/w): Eclipse, Java, and Maven

Objectives of the project: To build a face authentication system

Outcomes of the project: implemented real time attendance marking system using face recognition

Major Learning Outcomes: Java, Maven, OpenCV, Python.

Brief Description of working environment, expectations from the company: Mandatory working hours 45/week, good facilities provided, workculture is decent and varies from one team to another, expectation is to build applications functioning on java and JS frameworks.

Name: Anurag Malik (2012B2A8515G)

Student Write-up

Short Summary of work done during PS-II: I was mainly involved in the development work. I was given different stories each of which had some business demands and i had to fulfill them by developing the functionality that was needed. I also used to solve some issues related to JQuery, Bootstrap, etc. I also made a tool using groovy which is used to compare two war files and gives a detailed csv output with all the differences.

Tools used (Development tools - H/w, S/w): Java, spring, Hibernate, Sql.

Objectives of the project: To make the groovy tool a public utility within Nucleus Software.

Outcomes of the project: This tool will be merged in the existing project and has been sent to the testing team.

Major Learning Outcomes: Core Java concepts, spring, SQL.

Brief Description of working environment, expectations from the company: Different experience all together. We started off in a learning environment where we were given proper training about the Core Java concepts, Spring etc. This was really beneficial because few of us were new to all these concepts and those who weren't, they also got a chance to brush up their concepts again. Everyday there used to be lectures that we had to attend and where learning was actually fun and after those we were given tasks/assignments to complete each day that we had to finish. In the beginning we used to work from 9-5 and then we had an option of going to their rejuvenation center which has TT and pool tables along with carrom, gym and some music equipments. After 2 months of training, we were allotted our teams and we began our work. Work and life balance has to be maintained and that again depends on the team you are in. Some managers themselves leave by 5 and some start off their main work in the evening by 5 and work till late in the night. So working hours is not something that is fixed in this company. Rest, everything was good, people are friendly and really helping and the best part is that it already has a lot of Bitsians so it is definitely one of the very good PS stations that one can consider working in.

Name: Shivang Badola (2013A7PS089H)

Student Write-up

Short Summary of work done during PS-II: We had to build a face detection system using OpenCV, Python and java.

Tools used (Development tools - H/w, S/w): OpenCV, Python and Java Spring.

Objectives of the project: To build a Face Detector using OpenCV.

Outcomes of the project: Improve the attendance system using face detection.

Major Learning Outcomes: Learnt about java spring & OpenCV with python.

Brief Description of working environment, expectations from the company: System provided by company for projects are not great .Also we had to wait for several days for simple approval.Working hours are not flexible.

Name: Tushar Kanaujia (2013A7PS011H)

Student Write-up

Short Summary of work done during PS-II: Worked on Lazy Loading and data analysis to predict further patterns.

Tools used (Development tools - H/w, S/w): Machine Learning algorithms, angular 2, javascript.

Objectives of the project: To customize the webpage and also to analyze the already collected data for loan lending.

Outcomes of the project: As expected by the mentor.

Major Learning Outcomes: Got front end experience and in depth knowledge about machine learning algorithms.

Brief Description of working environment, expectations from the company: The working environment was very good as well as the mentors were very professional and eager to help us. They took initiatives to listen to our problems at hand and gave us time to learn. The colleagues were amazing to work with and the team was very goal oriented. Overall an amazing experience.

PS-II Station: Nutanix Technologies India Pvt. Ltd., Bangalore

Student

Name: Ayush Sharma (2013A7PS083G)

Student Write-up

Short Summary of work done during PS-II: I contributed towards the design and development of parts of an testing framework consumed internally by product development teams by providing interface agnostic abstractions over product's API end-points. I also contributed towards the development of an automated test engine. I also worked on one-click deployment of multi server monitoring tool and similarly developed a one script solution for end to end sandbox deployment for internal testing purposes.

Tools used (Development tools - H/w, S/w): Docker, Vmware Vsphere, HyperV, MongoDB, Django, REST framework, Coding Language: Python.

Objectives of the project: Provide hypervisor and interface agnostic abstractions for API end-points. Development of test engine.

Outcomes of the project: Successfully deployed the monitoring tool and developed sandbox, abstractions and test engine. Also prepared a docker image registry clean up service.

Major Learning Outcomes: Deep understanding of Networks, Databases, Virtualization and Operating System. Hands on experience with design problems. Importance of development of services that can be dockerized.

Brief Description of working environment, expectations from the company: Working environment is very good. Everyone from team mates to VP is very approachable for guidance. The culture is focused towards individual growth too. Expectation from an individual are good. The work is given with an opportunity of an ownership.

Name: Kinjal Jain (2013A7PS162H)

Student Write-up

Short Summary of work done during PS-II: Nutanix is based on cloud and it provides a storage-compute product for enterprise level consumers. I worked on the Test framework development written in Python under the Automation Framework & Tools team. Learnt good design principles and techniques and advanced constructs like Meta classes, decorators and properties. Also worked on unit-testing of our framework using Mock library and pytest modules.

Tools used (Development tools - H/w, S/w): Python - Pycharm, Bare-metal Hyervisors: ESX, KVM, HyperV, and REST APIs.

Objectives of the project: Development of test framework.

Outcomes of the project: Improvements and bug fixes and existing code base.

Major Learning Outcomes: Good practices and design principles in Python, Docker and distributed systems.

Brief Description of working environment, expectations from the company: Nutanix is above average in terms of working environment, there is a perfect balance in terms of recreation and work. Food is amazing and free of cost. Team mates are friendly and very intellectual (not just from work point of view). This is probably the best PS-2 company as far as working environment is considered.

Name: Varsheeth Talluri (2013A7PS045G)

Student Write-up

Short Summary of work done during PS-II: The internship at Nutanix has been a semester in BITS where I have learned to put my theoretical knowledge into application. Nutanix is a cloud computing Software Company that sells hyper-converged infrastructure (HCI) appliances and software-defined storage. I worked on a database monitoring tool in the initial phase of my internship. I was also involved in the major migration of a core package within Nutanix. In the later phase of my internship, I worked on the profiling page of the monitoring system and its related applications.

Objectives of the project: 1) Modify the database monitoring system. 2) Add features to profiling page.

Outcomes of the project: 1) modified the database monitoring system. 2) Added features to profiling page.

Major Learning Outcomes: Mainly learnt about cloud architecture and cluster management. Also, learnt the various development processes and stages in an IT company.

Brief Description of working environment, expectations from the company: The working environment is very good. All the people here are very friendly and helpful. Moreover the mentors and mangers always treat us like their friends rather than co-workers. There are team outings now and then to build up the rapport. The work is also very peaceful and the deadlines not at all suffocating. Coming to the perks, the pantries here have all the items you can think of to eat. There are reserved rooms for indoor activities like chess, foosball, TT etc. Also, everyday people here go to play some sport outside. Overall, it has been one awesome experience working here.

Name: Harshit Jain (2013A7PS289P)

Student Write-up

Short Summary of work done during PS-II: Work was in the data replication team. Mainly used C++. There was no ML or NLP involved but only raw coding. There were both ups and downs of this. Learnt how to manage a code base with thousands of files and interface with each of them. Worked on asynchronous calls and RPC's.

Tools used (Development tools - H/w, S/w): C++.

Objectives of the project: Add a new feature in data replication called Near-sync.

Outcomes of the project: Brought down the replication time form hours to minutes.

Major Learning Outcomes: C++, C structures.

Brief Description of working environment, expectations from the company: Awesome work culture, happy employees and enthusiastic people around. Food, cabs, refreshments all on the house.

Name: Abhishek Tiwari (2013A7PS810G)

Student Write-up

Short Summary of work done during PS-II: I was part of team Cerebro which provides a service that does backup, disaster recovery etc for the Nutanix Datacenter software product. I worked with the team on developing a set of workflows where users can protect VMs, backup VMs, restore, clone and migrate them across sites. The base code was already in place and I worked on adding more features.

Tools used (Development tools - H/w, S/w): C++, python, Nutanix software.

Objectives of the project: Stabilise the new software architecture being developed by Nutanix.

Outcomes of the project: Added features that allowed co-existence of older APIs and newer APIs.

Major Learning Outcomes: Proficiency in C++ and python.

Brief Description of working environment, expectations from the company: Working environment is very relaxed and friendly. Mentors were extremely helpful. The company expects the employees to achieve the tasks as independently as possible. And they expect employees to come up with tasks to take up and solutions to problems on their own. Further, the mentors help at every step of the process.

Name: Piyush Jain (2013A7PS415P)

Student Write-up

Short Summary of work done during PS-II: Worked in SQL Server Mobility Services team. The team focuses on automating migration of MSSQL servers from non-Nutanix to Nutanix clusters. My role was to provide UI automation testing support, PoC and shipping for a few features. I worked singly on the automation testing support, but worked with other members for major features.

Tools used (Development tools - H/w, S/w): Python, Java, Dockers, vSphere, Jenkins, Git.

Objectives of the project: PoC and implementation of a few features + Test automation support.

Outcomes of the project: All of my work was used from Day 1, complete ownership.

Major Learning Outcomes: Coding in collaboration, managing time, quickly narrowing down on cause of issues.

Brief Description of working environment, expectations from the company: Very fast-paced work environment. Everyone is busy, and as an intern you might find it difficult initially to ask for each and every small thing. On-boarding is a bit slow due to this. Once in the flow, the work feels great! The production cycle is fast. Every month something new is shipped. Team bonding is a huge plus. Work-life balance is good. You can reach out to anyone very easily. There are every-day meets, work is tracked properly, and everyone gets roughly equal amount of workload.

Name: Rachit Kansal (2013A7PS568H)

Student Write-up

Short Summary of work done during PS-II: The first part of the project was to write a GDB script which could assist in the debugging of the underlying file system, ZFS. The reason for undertaking such a project was that, kernel debugging is not an easy task and to get the required details about the ZFS structures one would have to manually parse the addresses and look at the memory contents. Hence through this process, we could automate the whole routine and give a report. My script provides the user with a list of several commands to help in the process of debugging. Also an external python file has been written which would call crash-utility and run the script to produce the report automatically for a given dump. Whenever the system reboots, the dumps would be searched and if there does not exist a corresponding report, it will be generated automatically. In the second part I had to get a way to generate compressed ELF dumps and test them in GDB.

Tools used (Development tools - H/w, S/w): C, GDB, Linux, ZFS, and VFS, make.

Objectives of the project: Generating and debugging ELF dumps.

Outcomes of the project: GDB script for automated report generation a dump in crash-utility.

Major Learning Outcomes: Linux Kernel, ZFS, VFS.

Brief Description of working environment, expectations from the company: The working environment was great and the company really takes care of its employees.

PS-II Station: PAYPAL, Bangalore

Student

Name: Divya Sanghi (2012B4A7958H)

Student Write-up

Short Summary of work done during PS-II: It was to learn Hadoop and pig scripting language and running scripts over PayPal data residing on cluster and also to build insights from that data.

Tools used (Development tools - H/w, S/w): Hadoop, Pig, Shell Scripting, Virtual Machine and IntelliJ.

Objectives of the project: To build insights of data residing on cluste.

Outcomes of the project: Pig scripts were coded and run over data and build dashboard to display statistics of error while receiving and storing data on cluster.

Major Learning Outcomes: Pig, Hadoop, Coding improved, Git.

Brief Description of working environment, expectations from the company: Working environment is good, it was a self project, so I did at my pace and when required, was given help by team members.

Name: Aparajita Roy (2012B3A7652H)

Student Write-up

Short Summary of work done during PS-II: Mobile application development and Testing.

Tools used (Development tools - H/w, S/w): Javascript, React Native, Java, TestNG, and Appium.

Objectives of the project: 1. To participate in development of mobile recharge app eventually released in Italy. 2. To develop end-to-end functional testing frameworks that are classified on the basis of speed, and make these tests command-line runnable for any user.

Outcomes of the project: 1. Completed development of various sections of app 2. Created testing suites classified on the basis of speed, and make them command-line runnable for external users. Also worked on an automation system that does automated testing of the various use-cases of the app.

Major Learning Outcomes: Learnt Javascript and React Native technology for app development, and Java and Javascript for testing and automation. Worked for a product that eventually went live which was a major learning experience. Experienced product development cycles and corporate culture, and got a good feel of the organisation in general.

Brief Description of working environment, expectations from the company: PayPal is a company which is fast creating a name for itself in the industry. I was a part of the Consumers Value-Added Commerce Team, with my team working on mobile recharge applications. I worked closely on such an application, working with Javascript and React Native which is a new and fast-growing technology. This was a product which eventually went live, which was a good learning experience. Apart from this, I created a functional testing suite that performs end-to-end API calls. This suite can deployed on any user's machine and run on the command-line, and was created using Java frameworks and PayPal's internal technologies. I also worked on a testing automation system that uses Javascript and Appium framework, which performs completely automated testing of various use-cases. My teammates were extremely smart and knowledgeable people and I got to learn a lot from them. Working environment was appropriately relaxed and fun. Open office culture means that you can approach anyone without prior appointment, which is very important for newcomers. It is an amazing environment where we work and have fun as well. As interns, we were also taken to an offsite event in Chennai, where we interacted with the senior members of the company and participated in lots of activities which was a wonderful experience. I had a lot of fun interning at PayPal and am grateful to the PSD for providing this wonderful learning experience.

Name: Kshitij Gupta (2013A3PS321P)

Student Write-up

Short Summary of work done during PS-II: My work was to implement the FPTI (First Party Tracking Infrastructure) for my team so that user behavior and needs can be better analysed and tracked. I kept track of all the user processes and events and sent it to the FPTI server to make a proper log of it. On

this logs with particular name tags, proper analytic algorithms were applied so that proper deductions on user needs can be made.

Tools used (Development tools - H/w, S/w): Software tools used - Eclipse (java), Postman (for calling the APIs), Kibana (for looking up the search results)

Objectives of the project: 1.To tracks every user process 2. To log the data that is collect the data and send it to the FPTI server 3. To be able to see the data on Kibana in proper format.

Outcomes of the project: I was able to listen to every user event and make a log of that onto to the FPTI server and thus this data can now be used for analysis.

Major Learning Outcomes: 1. Working in a big MNC and thus learning the work culture 2. Applying the the theoretical knowledge learnt until now and learn which things are actually important 3. Stronger Java Concepts

Brief Description of working environment, expectations from the company: The working environment and culture of PayPal is just amazing. It is a very open culture where you approach anybody and everybody without worrying about the hierarchy or titles. There is a lot of activates to do in your free time and lots of events happening regularly.

Name: Varun V Gopal (2013A7PS104G)

Student Write-up

Short Summary of work done during PS-II: Created a platform to provide email notifications regarding the status of offers to their creators/managers as a part of the offers and rewards team at PayPal.

Tools used (Development tools - H/w, S/w): Java, Oracle DB and AMQ.

Objectives of the project: To Create a platform to provide email notifications regarding the status of offers to their creators/managers.

Outcomes of the project: Created a system to do the same, as part of the existing Offer Management System.

Major Learning Outcomes: Learned to use Java and its various frameworks to create a system to perform a key organisational task.

Brief Description of working environment, expectations from the company: The working environment was excellent, and all the team members were extremely patient and helpful.

Name: Deven Bansod (2012B3A7316P)

Student Write-up

Short Summary of work done during PS-II: Built a demo-able proof of concept for a product idea using all the internal tools and systems. I also integrated with many of their existing services and lead the project to completion.

Tools used (Development tools - H/w, S/w): JAVA, Oracle SQL, NodeJS, ReactJS, and Spring Framework

Objectives of the project: * To build a proof of concept for a product idea * to develop the POC in such a way that it can be productionalised with minimum changes.

Outcomes of the project: * Completed the development of the planned proof of concept

Major Learning Outcomes: * Agile Software Development * Micro-services based Software Development * Spring Framework * Familiarity with NodeJS

Brief Description of working environment, expectations from the company: The company culture is great and it's a great opportunity for any fresh graduate to get to work here. Everyone at the centre embodies a similar spirit of being a customer champion. I felt that the team is made of able engineers

and leaders. Frequent meetups and interactions with higher management keeps you motivated towards a common goal. A good stipend and great perks are just a cherry on the top.

Name: Divya Theja K.P (2013A7PS151H)

Student Write-up

Short Summary of work done during PS-II: Developed complete web stack for an application for internal use.

Tools used (Development tools - H/w, S/w): Java, JQuery, Django, Python and Bootstrap.

Objectives of the project: To automate the application testing process.

Outcomes of the project: Expertise in web application development.

Major Learning Outcomes: Django framework, javascript, node js, organizational services.

Brief Description of working environment, expectations from the company: Good working environment. Good learning environment.

Name: B.V.Akhil (2013A3PS242P)

Student Write-up

Short Summary of work done during PS-II: My project focused on creating a framework to determine the percentage coverage of rule tests in IBM's BMRS (Business Rule Management System). I worked on writing listener classes in Java that would test the extent of coverage of the Business Rules against the test suites and give the test coverage.

Tools used (Development tools - H/w, S/w): Raptor (Custom Eclipse IDE), Grafana, Kibana.

Objectives of the project: Automate test validations and determine test coverage for business rules engine.

Outcomes of the project: Created automated test validations for capturing the percentage test coverage for various business rules.

Major Learning Outcomes: Worked on core Java and Test frameworks, used softwares for data aggregation like Grafana and Druid.

Brief Description of working environment, expectations from the company: The work environment and the culture is very good. Guys in the team were very helpful and always encouraged me to learn new stuff. The work - life balance is good, with flexible working hours. The overall environ helps you thrive and learn from your mentors and peers.

Name: Aishwarya Manek (2013A8PS361P)

Student Write-up

Short Summary of work done during PS-II: My point of focus doing the internship was Business Activity monitoring. It involves - Collection of data related to business activities in timely and efficient manner, Analyzing data based on dimensions relevant to specific concerns, displaying the result of the analysis in a user friendly interface. I used ELK stack for the same. Elastic search is a search engine based on Lucene. It provides a distributed, multitenant-capable full-text search engine with an HTTP web interface. Log stash is an open source tool for collecting, parsing, and storing logs for future use. Kibana is a web interface that can be used to search and view the logs that Log stash has indexed. It is also used to create visualizations of data stored in Elastic search. My project involved making code changes to publish the metrics relevant to my team from transaction request and responses to elastic search and analyzing them are using Kibana.

Tools used (Development tools - H/w, S/w): Java, Elastic search, Log stash, Kibana.

Objectives of the project: Building visualizations to analyze the Business Metrics, to gain insights.

Outcomes of the project: Analyzed some important metrics to gain insights about my team's performance.

Major Learning Outcomes: Learnt new technologies like ELK stack.

Brief Description of working environment, expectations from the company: Good working environment, emphasis on learning. Proficiency in Java is not expected, but will be very helpful. Be willing to learn new technologies.

Name: Aditya Sharma (2012B3A7513G)

Student Write-up

Short Summary of work done during PS-II: Build a Analytics dashboard for a Paypal Product which will help them to gain insights into the product.

Tools used (Development tools - H/w, S/w): Pig, SQL and Metabase.

Objectives of the project: - To build a developer independent analytical tool for the team by scrapping logs.

Outcomes of the project: Helped team to gain insights and help in migration from legacy to new stack.

Major Learning Outcomes: - Learned how to write Pig Scripts.

Brief Description of working environment, expectations from the company: Working Environment is good. People here will help you. However my work was very monotonous. I did not learn much.

PS-II Station: PAYPAL, Chennai

Student

Name: Yash Tibrewala (2013A7PS121P)

Student Write-up

Short Summary of work done during PS-II: End-to-end Design and Development of Verification as a Service.

Tools used (Development tools - H/w, S/w): Spring Boot, Node.js, Kraken, React and Redux.

Objectives of the project: =- Study the verification services market - Chalk up the high level and technical design for the project - Build the service.

Outcomes of the project: Chalking up with the design and completing phase 1 of the project.

Major Learning Outcomes: =- Gained domain knowledge - Learnt Java, Node, React.

Brief Description of working environment, expectations from the company: Informal and Open Environment.

Name: Yash Pargaonkar (2013A7PS012P)

Student Write-up

Short Summary of work done during PS-II: A solo project titled 'API Specification Tool' whose objectives were as follows: Automate the creation of Open API Specification of a RESTful API that is not prone to manual errors. The tool itself is a SPA built using React.js and the Material UI library. The tool includes features for creation of CRUD components by drag and drop mechanism, allows creation of (composite) objects, includes parameters and responses for each method, allows existing PayPal object definitions to

be included with modifications. You can also save an API to local browser's memory and edit it later. The API Spec can be created in JSON format.

Tools used (Development tools - H/w, S/w): React.js (Material UI library and others).

Objectives of the project: Automate the creation of Open API Specification of a Restful API that is not prone to manual errors.

Outcomes of the project: A JSON API Spec is created via automation that will reduce the time required for API documentation to be created.

Major Learning Outcomes: Learnt front end development using React.js and npm. Also learnt Node.js for another short project.

Brief Description of working environment, expectations from the company: Working environment is like most software tech companies in the US. Each intern is assigned a mentor and others in the team are also easily approachable for work related queries. Expectations: You are expected to complete the project in byte sized chunks and show progress at each stage to your mentor and manager.

Name: Varun Vasudevan (2013A7PS103P)

Student Write-up

Short Summary of work done during PS-II: PayPal is one of the frontiers of payments in the world. I was part of the Transaction Engine Team which worked on the System of Records. I was involved in more than one project during the entire course of PS. My work required the use of javascript and Spring Boot to build system integrity tools for database. JAVA and C++ knowledge was a must to begin with as most of the underlying code (except the UI) was in JAVA or C++. Later on I built tools to monitor box level health information for the servers.

Tools used (Development tools - H/w, S/w): javascript, spring, Django, JAVA.

Objectives of the project: To implement tools for database monitoring purposes.

Outcomes of the project: Managed to finish and fix bugs within the given time frame (Agile Policy).

Major Learning Outcomes: Learned to work in an environment which required building on existing code rather than writing from the scratch.

Brief Description of working environment, expectations from the company: One of the best places to work as a student or a fresher. Co-workers very helpful and as far as the code base is considered, it is neatly documented so new people can easily start working.

Name: Vishal Athreya (2012B5A7625H)

Student Write-up

Short Summary of work done during PS-II: Migrating PayPal's Loss Forecasting process from SQL + Teradata to Python + Hadoop and moving to a Daily Loss Forecasting paradigm using Python Parallelization.

Tools used (Development tools - H/w, S/w): Python Pandas, Parquet Reader and Hadoop.

Objectives of the project: To adopt a daily loss forecasting model.

Outcomes of the project: Daily Loss forecast takes ~20 minutes as opposed to ~2-3 hour long Monthly forecast.

Major Learning Outcomes: Forecast process, methods and parallelization.

Brief Description of working environment, expectations from the company: A relaxed and fun place to work in. Approachable people, decent work. Facilities like free gym, drinks, snacks, pool table, badminton, basketball, TT table.

Name: Garima Dhanania (2012B4A3381P)

Student Write-up

Short Summary of work done during PS-II: Project 1: It was a web development project. We had to build an intranet portal for the team using concepts of gamification. We used a Node.js, Express.js, Mongodb stack. I worked on the backend. We used the MVC design pattern in our project. Project 2: Building a slack bot for monitoring purposes for a team. First I experimented this in Node.js using Botkit. The bot took input commands from the Slack user, and formatted them to a JSON, which would be used to query the ElasticSearch API. I then moved on to Scala, as team's codebase was in Scala. After trying multiple things, this project was called off, as there isn't enough support to build Slack bots in Scala. Project 3: Building an operational dashboard for the team. It primarily involves work in Angular.js and frontend.

Tools used (Development tools - H/w, S/w): Project 1: Node.js, Express.js, Mongodb, Javascript, HTML, CSS; Project 2: Node.js, Botkit, Express.js and Scala Project 3: Angular.js, Javascript.

Objectives of the project: Project 1: Build an intranet portal. Project 2: Build a Slack Bot that takes in input commands, and replies with monitoring information. Project 3: Build an operational dashboard (portal).

Outcomes of the project: Outcomes of the projects are the same as the objectives.

Major Learning Outcomes: Project 1: Node.js, Express.js, Mongodb, Javascript, HTML, CSS; Learnt MVC design pattern, learnt web development essentials. Project 2: Node.js, Botkit, Express.js, Scala learnt how to build a Slack bot. Project 3: Angular.js, Javascript.

Brief Description of working environment, expectations from the company: Culture here at PayPal is very good. The main office is in Chennai, so there are more opportunities here. There is always some or the other event happening in office. Work wise the company is relaxed. I don't think there is much pressure. It’s up to you how much pressure/workload you want to take up. Benefits: There is a gym, dance/yoga/aerobics classes. Cafeteria food is very good and reasonably priced. PayPal buses are available for pickup and drop.

PS-II Station: Pilani Experts Technology Labs Pvt. Ltd.

Student

Name: Srujan Jayati (2012B4A4713G)

Student Write-up

Short Summary of work done during PS-II: The goal of the project is to continuously optimise the product, based on results from B2C sales and operations. For this, continuous feedback is taken from the customers, in order to develop the product. In essence, any positive outcome from B2C sales is analysed to further improve the product; and any negative outcome is analysed to change particular product features. Also a work flow for the tech team is created in order to automate a few processes.

Tools used (Development tools - H/w, S/w): Excel/Google Sheets/Internal tools.

Objectives of the project: The goal of the project is to continuously optimise the product, based on results from B2C sales and operations.

Outcomes of the project: Inputs given to the tech team reduces the time taken to efficiently carry out operational processes.

Major Learning Outcomes: A great understanding of the startup world.

Brief Description of working environment, expectations from the company: Great working environment, enthusiastic people to work with. Adding value to the company in some or the form is the only expectation.

PS-II Station: Pitney Bowes Software India Pvt. Ltd., Noida

Mentor

Name: Dr. Manish Sharma

Designation: Principal Architect

Comments: The project is mainly based on Machine Learning. Generation of recommendations for customers based on existing large volumes of data from various e-commerce and e-business sites. The students were able to achieve good levels of accuracy in generating recommendations using research-level algorithms. Though in research phase, the project adds good value to the company in terms of increasing efficiency and correctness to various existing processes. The students were able to think out-of-the-box and research on new technological possibilities to approach and solve the problem at hand.

Student

Name: Deepak Gupta (2013A7PS156H)

Student Write-up

Short Summary of work done during PS-II: Worked somewhat on machine learning to classify sign boards, also worked with parallel databases.

Tools used (Development tools - H/w, S/w): NVIDIA DIGITS, PG-Strom and Greenplum DB.

Objectives of the project: To reduce the time taken to run queries by parallelising the database

Outcomes of the project: The time taken by the queries was considerably reduced.

Major Learning Outcomes: Greenplum is better than PG-Strom when run on a single machine.

Brief Description of working environment, expectations from the company: Working environment is very good. Not much pressure is there from the company side.

Name: Ruchir Thaman (2013A7PS187H)

Student Write-up

Short Summary of work done during PS-II: Built a scalable and realtime product recommendation engine.

Tools used (Development tools - H/w, S/w): Neo4j, Google Big query, and python.

Objectives of the project: Generate lookalikes, and give personalised recommendations to customers.

Outcomes of the project: Successfully built a scalable recommendation engine.

Major Learning Outcomes: Practical knowledge of Machine Learning concepts.

Brief Description of working environment, expectations from the company: Great work life balance. Though for the last one month didn't have any solid work to do. Mentor-ship should have more direction.

Name: Yash Raj (2013A7PS200H)

Student Write-up

Short Summary of work done during PS-II: I built a recommendation engine by using matrix factorization giving transaction data as input.

Tools used (Development tools - H/w, S/w): Jupyter Notebook, flask.

Objectives of the project: To understand the working of different recommendation models.

Outcomes of the project: Built a recommendation engine.

Major Learning Outcomes: Machine Learning, Python.

Brief Description of working environment, expectations from the company: Pitney bowes has a very friendly and welcoming environment. All the basic facilities are available here.

PS-II Station: Qubole, Bangalore

Mentor

Name: Uday K

Comments:

Work done by the intern is really good up to the expectation and ability to accommodate all the requirements is commendable. Expectations from the interns would be to have basics of computer science, coding experience in C++ or JAVA. Industry is open to non-computer science students provided they excel in par with the others in terms of computer science domain and recent technology.

Faculty

Name: Raja vadhana P

Comments: Expectations from industry: Qubole: Big Data Tech, Hadoop ecosystems.

Student

Name: Bhargavi Sagi (2012B2A7643H)

Student Write-up

Short Summary of work done during PS-II: front end development.

Tools used (Development tools - H/w, S/w): javascript, html, css, Ruby on Rails.

Objectives of the project: Implemented select and run feature. When a part of query is selected, only selected portion is run as a separate query.

Outcomes of the project: Made front end changes for this feature.

Major Learning Outcomes: Ruby on rails and frontend technologies like javascript.

Brief Description of working environment, expectations from the company: Working environment in Qubole is very good.The learning curve is high.

Name: Ayushi Agarwal (2013A7PS065P)

Student Write-up

Short Summary of work done during PS-II: Worked in the Hive team so get to work on open source Hive code. Developed an API in python and java which collected metrics from different stages of Hive query processing and sent it asynchronously to different monitoring and analyzing agents. Wrote unit tests for the API.

Tools used (Development tools - H/w, S/w): Java, Maven, Python, and Ruby.

Objectives of the project: To collect metrics from different stages of Hive query processing.

Outcomes of the project: Using the metrics anomalies can be found in the normal working of clusters.

Major Learning Outcomes: Developed good coding practices in Java and Python. Used multithreading and synchronization. Learned about unit testing.

Brief Description of working environment, expectations from the company: The working environment is good. Everyone is very helpful and supportive. You get the feel of working in a startup. I expected some challenging work but didn't find it challenging enough. They should give more challenging work to interns.

Name: Pooja Sinha (2012B4A7939H)

Student Write-up

Short Summary of work done during PS-II: I worked in the spark team in Qubole. Following are the projects i have worked on: 1. Analysis of notebooks: Created a notebook to analyze all the notebooks across Qubole to answer useful questions like % of commands in scala, python, R; number of commands in the month; search for a keyword across all notebooks etc. 2. Spark job level metrics: Fixed the wrong values of job counters displayed at the end of every spark command. 3. Sending info about spark commands to metricsd: Recorded information about spark commands as a json and sent it to the metricsd web server.

Tools used (Development tools - H/w, S/w): spark, notebooks.

Objectives of the project: Fix/ improve functionalities in spark.

Outcomes of the project: completed.

Major Learning Outcomes: Big data engines (mainly spark), scala, git operations.

Brief Description of working environment, expectations from the company: Working in Qubole for these 5 months was indeed bliss. Everybody was very co-operative and friendly right from day-1. Being a small company, I got to work directly with my team leads and from people across teams too, which we don't generally find in big companies. The projects I worked on were interesting and challenging and involved learning a lot about spark and scala. It wasn't only all work at Qubole. We did have company parties and outing too. The work, work culture and people are the reasons I am excited to work as a FTE in Qubole (yes, I did get a PPO from Qubole).

Name: Shrey Shah (2013A7PS098P)

Student Write-up

Short Summary of work done during PS-II: I worked on the development of ODBC and JDBC drivers for Qubole Data Services. I also worked on adding certain new features in the open source database engine Presto.

Tools used (Development tools - H/w, S/w): IntelliJ, Maven, Git, Visual Studio, Linux Knowledge, Java, C++.

Objectives of the project: Add features to ODBC, JDBC drivers and Presto.

Outcomes of the project: Add features to ODBC, JDBC drivers and Presto.

Major Learning Outcomes: How big data engines work at the backend, using Git, using Maven.

Brief Description of working environment, expectations from the company: Qubole has one of the best work environments and cultures among all places I have been. The working hours are pretty flexible and people here are highly knowledgeable and helpful. Fun to work place.

PS-II Station: ReportGarden Technologies Pvt. LTd., Hyderabad

Student

Name: Vishnuvardhan Tirumala (2012B4A8768G)

Student Write-up

Short Summary of work done during PS-II: First I did little bit of marketing, after that I moved to data analytics and I am learning data warehousing and engineering.

Tools used (Development tools - H/w, S/w): PostgreSQL, Apache Airflow, Amazon Web Services - Red shift, S3, Elastic Beanstalk.

Objectives of the project: Relational Database Management.

Outcomes of the project: Thorough understanding concepts of Relational Databases.

Major Learning Outcomes: Data Analytics, Data Warehousing, Data Engineering.

Brief Description of working environment, expectations from the company: Good place to work, it is a Bitsian Startup.

PS-II Station: Rivigo Services Pvt Ltd, Gurgaon

Mentor

Name: Raghav Jain

Designation: Senior Manager, Operations

Comments:

Students are involved in business development activities throughout the internship. Students have actively involved themselves in developing new strategies to optimize procedures and expand our business rapidly. Interns have made significant contributions to our business and supported us as full time employees. We look forward to have interns who are proactive, creative, and eager to learn new stuff and have excellent communication skills.

Faculty

Name: Ashish Narang

Comments: Expectations from industry:

Rivigo Services Pvt. Ltd. Founded in 2014, is an Indian supply chain and logistics company that provide logistics services all across the country. Organization uses a unique relay model which puts them ahead of their competitors. Rivigo offers profiles in operations management and software development. Interns in operations management are expected to develop new strategies to optimize and rapidly expand delivery services across PAN India. Interns in Software development are expected to automate vehicle tracking, which helps management in appropriate decision making. They are exposed to latest technologies like Java Springs, GIT, SQL and Python etc. Organization prefer to have interns with knowledge of operations management, Object oriented Programming, Databases and Data Structures etc.

Student

Name: Ayush Jain (2012B4A4739P)

Student Write-up

Short Summary of work done during PS-II: My work involved establishment of the franchise model. I was lucky to get the chance to be a part of the team from the initial month of the project. The role varied a lot, which was a good learning experience. The major part of the role was in sales, which included both lead generation and lead closure. Over all it was a good experience, with a good balance of start-up hustle culture and corporate work environment. The experience at Rivigo varies from team to team, but overall work environment is output driven presenting a lot of learning opportunity.

Objectives of the project: Establishment the franchise network for part truck load service.

Outcomes of the project: Better penetration in the local micro-markets.

Major Learning Outcomes: Opportunity to hone my leadership and management skills. In developing skills for B2B sales.

Brief Description of working environment, expectations from the company: The work environment is output driven and competitive. Includes hustling as in a start-up and professionalism as in a corporate work environment.

Name: Aayush Khandelwal (2013A4PS480H)

Student Write-up

Short Summary of work done during PS-II: Worked on increasing delivery serviceability across India by partnering up with small and medium regional logistics companies. Launched the Network Partner program state wise after careful audits of the prospective partners and a very detailed and in-depth analysis of the entire handover process.

Objectives of the project: To make all of India serviceable for delivery.

Outcomes of the project: Pan-India plan prepared and 2 states launched successfully.

Major Learning Outcomes: Vendor on boarding, operations excellence, holistic planning and problem solving approach.

Brief Description of working environment, expectations from the company: The working environment is kind of intense. This isn't your usual internship. We are treated the same way as employees and are entrusted with the same amount of responsibility. You are responsible for your own tasks and no one spoon feeds you or walks you through things. This is a company which requires you to think and act like an entrepreneur and the environment will either leave you frustrated because of the high expectations from you or you'll get to learn a lot and come out as a much better individual.

Name: Arjun Moolrajani (2013A3PS295P)

Student Write-up

Short Summary of work done during PS-II: I worked on two projects. First project was full stack web development in which I added numerous new features in existing web apps used by the organisation. This enabled me to learn basics of UX, back-end and database management. It was a good and diversified learning experience for me. Second project involved data-analytics and reporting in which I used python and many python packages. It was an interesting project to work on and helped me learn various techniques in data-analytics.

Tools used (Development tools - H/w, S/w): Java Spring, Javascript, Python, AngularJs and MySQL.

Objectives of the project: Add new features to existing web apps. Analyze GPS data and process it to draw useful insights.

Outcomes of the project: New features for Driver ERP web-app. automated techniques to analyse GPSdata and draw insights.

Major Learning Outcomes: Full stack web development. Database management and data analytics.

Brief Description of working environment, expectations from the company: Overall the experience was good. My colleagues were very helpful and this enabled me to learn many things from them and implement them in my projects. The work was a little unstructured but in turn it taught me to take full ownership of my project. You can expect a little hectic work environment and more than one project during the internship but it is a good learning experience.

Name: Geetika Garg (2012B1A3817P)

Student Write-up

Short Summary of work done during PS-II: Worked on multiple web development projects. Worked as a full stack developer. Learning experience was good and diverse. I was able to learn basics of both UX development and back-end development.

Tools used (Development tools - H/w, S/w): Java Spring, AngularJS.

Objectives of the project: Web Development.

Outcomes of the project: New features in web apps.

Major Learning Outcomes: Full stack web development.

Brief Description of working environment, expectations from the company: I enjoyed working at Rivigo. The work was diverse so was the learning. There is lot to learn and the people here are helpful.

Name: Ankurjyoti Bordoloi (2013A4PS208P)

Student Write-up

Short Summary of work done during PS-II: Primarily involved in business development, strategy and sales for the retail and franchise business verticals within the organization.

Tools used (Development tools - H/w, S/w): MS Excel, Sales force, In-house tech platform (Zoom Tech).

Objectives of the project: To use analytics as a tool to track sales and develop insights to improve on current sales performance.

Outcomes of the project: Achieved the desired results with rapid growth in the retail and franchise models.

Major Learning Outcomes: Use of Excel, importance of data and analytics to drive and develop business.

Brief Description of working environment, expectations from the company: The working environment within the organization is very fast-paced and competitive, and requires a lot of mental activity to be efficient in one's task. The organization is filled with smart people from various reputed colleges who have earlier worked in respected companies. It is a place filled with great people, which makes it really interesting to work.

PS-II Station: Sabre Holdings (Formely Sabre Travels), Bangalore

Student

Name: Bhavaya Gupta (2012B1A3833P)

Student Write-up

Short Summary of work done during PS-II: The QIK Developer is a toolkit built on Java that is used to build desktop applications in particular for the airline industry. The application built by Sabre called Interact, is a point of sale (POS) application used by airline/travel agents for booking tickets for passengers and also used at the airports for performing operations like check-in, bag-tag printing, boarding-pass printing, selling in-flight services to name a few. Interact supports 4 languages- English, Portuguese, Russian & Spanish. There is a Translations table utility in QDT which stores all the English texts displayed in the application and their translations. This table has buttons to import & export '.properties' files which contain all English texts and their translations. The main project undertaken during the internship was about making the process of filling this Translations Table easier and less time consuming. It was achieved by writing a program in Java which wrote the data containing the translations into '.properties' files which can be imported into QDT. This project is very useful to developers in team Interact because this program will automate the process and bring down the effort and time needed to add the translations in QDT. As shown in the test run included in the report - all 4 sample strings considered were behaving as expected. The success rate of the program is 100%. Other than the time spent on main project, remaining time was spent in giving assistance to the team in both development and testing tasks, in their routine projects (projects to enhance the application further).

Tools used (Development tools - H/w, S/w): Core tools - QIK Developer, Java, and Eclipse IDE. Utility tools - Apache SVN, Tortoise SVN, Maven, JIRA, RALLY (by CA Technologies), HP ALM, etc.

Objectives of the project: 1. Understand the challenges in the process of manually filling the translations table in QDT and propose an alternate process which is less time consuming. 2. Learn to use the 'QIK Developer' tool (QDT) used by Team Interact and assist the team in their various projects by performing both development tasks as well as testing tasks as per the requirement.

Outcomes of the project: 1. In the first month of the internship, a very extensive training was given by team Interact for imparting knowledge of- the airline domain, the product- Interact application, the QIK Developer tool, defect management tool- ASJIRA, software version management tool- Apache SVN, Sabre Global Test Engineering (GTE) process, software release management, AGILE methodology of Software development, SCRUM framework and ceremonies, etc. 2. After 'QIK Developer' tool (QDT) was learnt, the team was given assistance in various development and testing tasks as part of team's projects. 3. Then the process of manually filling the translations table in QDT and its challenges were understood in-depth and an alternate process was proposed and executed. The Java code has been written and re-written multiple times to reach the present functionality. As shown in the test run included in the report - all 4 sample strings were behaving as expected. The success rate of the program is 100%.

Major Learning Outcomes: 1. I learnt development in 'QIK Developer' tool which is primarily used for making UI. Although there is a limited set of companies in Airline domain that need QIK developers, but if you are good at QIK, you will be valued more than the average engineer (as is the case with any uncommon technology for which engineers are hard to find) 2. I learnt the working of and how to setup version control systems- Apache SVN in my case.

Brief Description of working environment, expectations from the company: The working environment is just satisfactory. The perks/benefits here are lesser than what you get at NVIDIA/Wallmart and alike- No cab service, no free lunch and no company outings. But that doesn't mean, you won't party for free with your team. People are very friendly and you will be given good training and you will be treated with respect, especially if you are from a tier-1 college.

Name: Sajidur Rahman (2011B5A7496G)

Student Write-up

Short Summary of work done during PS-II: Automated testing of Sabre GDS related products like flight ticketing, exchanges and refunds.

Tools used (Development tools - H/w, S/w): HP ALM, UFT/QTP, VB Script.

Objectives of the project: Create automation scripts for regression testing.

Outcomes of the project: Automation scripts handed over to Central Automation Team. The team will run the scripts for regression testing before new releases and for sanity testing.

Major Learning Outcomes: Quality Assurance, Testing, Soft Skills, Agile Methodology.

Brief Description of working environment, expectations from the company: The work environment is very productive. The employees are approachable for any help or guidance. Projects are versatile.

Name: Yogesh Godhwani (2012B1A3644G)

Student Write-up

Short Summary of work done during PS-II: The task was to count the test cases from the ALM, which is a tool used by sabre for executing test cases. This involved understanding and parsing the folder structure of the given test case so as to identify unique test cases and return the count of passed, failed and blocked test cases. The test case information was retrieved from ALM using SQL queries. • The task was to write a script in Java to generate, trigger and validate the PNR Gov message from Java. This involved using a Sabre native framework known as test Kit which has Jars and dependencies which can be used to create a PNR from within java using minimal code. The basic flow was that the java script would create a PNR and trigger the PNR Gov message from within it. I had to write the code to fetch the PNR Gov message from the log where it had been generated and to validate it with the information that had been provided by the user.

Tools used (Development tools - H/w, S/w): Java, Test Kit, ALM and Django.

Objectives of the project: Automation Scripting to make testing easier.

Outcomes of the project: Built some tools which made the testing for the PNR Team easier and hassle free.

Major Learning Outcomes: Learn a great deal of Django and Java and Testing tools.

Brief Description of working environment, expectations from the company: Working environment was great and the team was very helpful which made learning easier and fun.

PS-II Station: Samsung R &D Institute - Image & Video Processing, Bangalore

Student

Name: ASHMITA ROY (2013AAPS214H)

Student Write-up

Short Summary of work done during PS-II: Developing a Service which enables data exchange between a Constrained Device and a Wearable device using a Proxy Device whose role could be taken up by a Smart Device.

Tools used (Development tools - H/w, S/w): Android Studio, Eclipse.

Objectives of the project: Developing a Service which enables data exchange between a Constrained Device and a Wearable device using a Proxy Device whose role could be taken up by a Smart Device.

Outcomes of the project: Developing a Service which enables data exchange between a Constrained Device and a Wearable device using a Proxy Device whose role could be taken up by a Smart Device.

Major Learning Outcomes: JAVA, App Development.

Brief Description of working environment, expectations from the company: Helpful team. Major expectations include being disciplined and meeting the deadlines set more or less.

Name: Shalini Chaudhuri (2013A7PS331H)

Student Write-up

Short Summary of work done during PS-II: Visual place Recognition using computer vision techniques. This is important in mapping and localisation as they appears of a scene may vary due to differences in lighting conditions, dynamic elements, orientation changes.

Tools used (Development tools - H/w, S/w): openCV, android.

Objectives of the project: Robust place Recognition.

Outcomes of the project: Comparison of algorithms, application.

Major Learning Outcomes: Computer vision.

Brief Description of working environment, expectations from the company: Korean work culture. Pay discrimination between colleges for employees.

Name: Tushar Garg (2013A7PS070H)

Student Write-up

Short Summary of work done during PS-II: Worked on Virtual Reality developing for Gear VR and Oculus. Created a Navigation Module to sync different inputs for the developers. Rendered 3D models in OpenGL for desktop application and in EGL for VR. Added advanced features of Collision Detection.

Tools used (Development tools - H/w, S/w): S/w -> OpenGL, Visual Studio, Android Studio and Oculus Mobile SDK.

Objectives of the project: Navigation Module for Desktop Application.

Outcomes of the project: Module exposed as API for developers on Native Development Kit in Oculus Mobile SDK.

Major Learning Outcomes: Graphics, VR Development, Algorithms and Optimization.

Details of papers/patents: In progress.

Brief Description of working environment, expectations from the company: Lots of learning opportunities, nice mentors and managers. Expectation from the company to ideate and come up with new solutions. For PPO, required to clear a Coding test followed by interview. Discrepancy in Pay structures between BITS campuses.

Name: NAVEEN JAFER N (2013A7PS019H)

Student Write-up

Short Summary of work done during PS-II: 3D reconstruction pipeline was built using open source tools. An application was developed to complement the previous work done in the same field.

Tools used (Development tools - H/w, S/w): OpenMVG, OpenMVE and Cmake.

Objectives of the project: To create a complete end to end 3D pipeline that can work with structure from motion.

Outcomes of the project: To be able to use previous information obtained from different environments to predict future acquisitions.

Major Learning Outcomes: Understood computer vision, features extraction, SIFT, feature matching, incremental SfM and many other.

Details of papers/patents: OpenMVG library.

Brief Description of working environment, expectations from the company: Good for 5 months. Korean work culture. Not very enjoyable for permanent work. Discrimination in pay on basis of campuses.

Name: RAJAS JOSHI (2012B5A7850H)

Student Write-up

Short Summary of work done during PS-II: To construct a complete a 3-D reconstruction pipeline using open source algorithms. Then write a machine learning model to learn different optimal values for various features to assist automated acquisition (e.g. using UAVs). The major steps followed in the pipeline are as follows: 1) Take images from around an object as input. 2) Generate a sparse point cloud using Structure from Motion technique. 3) Densifying this point cloud. 4) Mesh Reconstruction. 5) Texture Generation.

Tools used (Development tools - H/w, S/w): C++, Python, openCV.

Objectives of the project: To construct a complete a 3-D reconstruction pipeline using open source algorithms. Then write a machine learning model to learn the optimal values for various features to assist automated acquisition (e.g. using UAVs).

Outcomes of the project: Constructed a complete 3-D reconstruction pipeline using open source algorithms. Wrote a machine learning model for learning the optimal values for various features to assist automated acquisition.

Major Learning Outcomes: Learned Multiview stereopsis in some detail. Was acquainted with some Computer Vision concepts.

Brief Description of working environment, expectations from the company: 45 hours (5 day) work week policy. Projects are interesting, research oriented and (mostly) fun to work on. Student is expected to do justice to the same.

Name: SEGU ILA (2013AAPS236H)

Student Write-up

Short Summary of work done during PS-II: Autocompletion functionality for Tizen C#editor.

Tools used (Development tools - H/w, S/w): Eclipse, Tizen studio.

Objectives of the project: To implement autocomplete functionality for tizen IDE.

Outcomes of the project: Tizen csharp editor is now able to autosuggest by relevance.

Major Learning Outcomes: Eclipse plugin development to extend the functionalities of Eclipse.

Brief Description of working environment, expectations from the company: It's easy to approach anyone in the team.

Name: SAI SRAVAN ANANTHABHATLA (2013AAPS117H)

Student Write-up

Short Summary of work done during PS-II: I was assigned to security team in Tizen operating system team.My project was to optimise some security related modules in the first half. This involved going through code for many core OS related service code written and then trying to optimise the performance of the modules. One such module assigned was cynara. In my second half time in the company, I was assigned a project to automate a tool GDB which is used extensively internally. I designed developed and deployed this system in a local server.There are many other minor tasks assigned apart from main projects.

Tools used (Development tools - H/w, S/w): GDB, Node Js, Bash and V++.

Objectives of the project: Optimise the modules and to automate GDB analysis.

Outcomes of the project: Implemented a solution to optimise a module called cynara and proposed better methods to implement further changes. The GDB analysis is successfully automated using a local server.

Major Learning Outcomes: Optimising code of big modules which has hundreds of files. Shell scripting and knowledge about packaging software at OS level.

Brief Description of working environment, expectations from the company: The work environment is very typical one found at any software company. All the employees are either from top premier institutes or atleast 10 years experienced. There is good scope to learn from them .The company doesn't expect a very high performance.

Name: KUNCHAKURI VARUN KUMAR (2013AAPS254H)

Student Write-up

Short Summary of work done during PS-II: Developed a tool for debugging wayland known as Wayland debugger which will help to debug applications by providing features.

Tools used (Development tools - H/w, S/w): c, gdb.

Objectives of the project: development of Wayland debugger for Tizen 3.0.

Outcomes of the project: developed wayland debugger.

Major Learning Outcomes: gdb, display protocol.

Brief Description of working environment, expectations from the company: Good perks and nice people to work with.

Name: KESHAVA CHANDRA SAI KANDIKONDA (2013A7PS025H)

Student Write-up

Short Summary of work done during PS-II: My project deals with 3D Mesh compression of Arbitrary Textured Meshes. Meshes are used for representing Objects in 3D. Given the kind of data requirements in today's generation, it is absolutely essential to have these meshes to be able to processed and transferred more efficiently. My project helps with the support given to the POMAR algorithm by extending it to textured Meshes.

Tools used (Development tools - H/w, S/w): Visual Studio, MEPP, PCL, Openmesh, Meshlab and VCGLIB.

Objectives of the project: The project deals with 3D Mesh compression of Arbitrary Textured Meshes by making the process more efficient and faster.

Outcomes of the project: The project helps with the support given to the POMAR algorithm by extending it to textured Meshes.

Major Learning Outcomes: Learnt basics of Computer Graphics, learnt about Meshes and their uses, learnt mesh compression and processing too.

Brief Description of working environment, expectations from the company: Samsung R&D Bangalore is a good place for those interested in research oriented work profile. There is always constant support from the peers and your mentors and managers to keep you motivated. Considering how busy Samsung

is in the market, it is expected to get a lot of projects and interns are expected to work on those live projects too. With an added advantage of free food and free transport, Samsung is a good place to work in.

Name: SHUBHAM JAIN (2012B1AA741H)

Student Write-up

Short Summary of work done during PS-II: Web application development.

Worked on the development of server side of the web application, Adnex.The project involves - 1.Building RESTful Web APIs to load DICOM/JPEG images and calculate probabilities of different stages of malignancy (using pre-developed algorithm). 2. Integrating the web application with PACS server.Android app development-Worked on development of an android application which displays the profile of the patients.The app provides easy and on the go access to entire data - personal information of the patients, their scan results, and test reports.

Tools used (Development tools - H/w, S/w): Android Studio, Visual Studio.

Objectives of the project: To develop of the mentioned applications as a PoC.

Outcomes of the project: Accomplished the development of the web application (Adnex) with desired functionalities and also the development of the android app with all the required features.

Major Learning Outcomes: Android development.

Brief Description of working environment, expectations from the company: I'd rate the work environment at Samsung to be okay - not that great but not that bad either. There is a 45 hours work policy which is strictly followed. So there are times when you are relatively free but you have to stay in office nonetheless because you have to clock -in hours as per the work-time policy. Other than that there are many perks like free food, free transport etc etc.You have to clear the advanced level coding test as one of the eligibilities for a PPO to be extended (so yeah interviews too follow). And the CTC they

offer differs on the basis of your college (even disparity among Pilani campus and Hyderabad & Goa campus packages).

Name: SHREYASH OMNARAYAN MOHATTA (2012B4A7421G)

Student Write-up

Short Summary of work done during PS-II: Created a framework for interacting with 360 videos in VR. User would be able to bring in extra objects into the environment based on the requirements, so as to better understand something.

Tools used (Development tools - H/w, S/w): Android Studio, Gear VR, Galaxy S7 and GVRf.

Objectives of the project: Develop a framework for interactive 360 videos.

Outcomes of the project: Completed the objective.

Major Learning Outcomes: VR and graphics developed.

Brief Description of working environment, expectations from the company: Relaxed work environment. PPO not so great for Goa and Hyderabad campuses.

Name: POLAMREDDY VINEETH REDDY (2012B3AA599H)

Student Write-up

Short Summary of work done during PS-II: Android development.

Tools used (Development tools - H/w, S/w): Android Studio.

Objectives of the project: To develope a personalization client application.

Outcomes of the project: personalization client Application.

Major Learning Outcomes: Android, java.

Brief Description of working environment, expectations from the company: Good working environment. The company is expecting the interns to be good at basics and have a minimum coding knowledge.

Name: SUBHAM SONI (2013A7PS069H)

Student Write-up

Short Summary of work done during PS-II: Mostly my work was about learning how the Samsung NLU team uses internal tools to do their NLU development. We did not get to do any actual coding in C++ but was mostly restricted to peripheral modules that were already coded. All we did was full up the tools and execute modules throughout the project.

Tools used (Development tools - H/w, S/w): Samsung internal tools for developing (ACE).

Objectives of the project: NLU Process additions. Basically filling up a Samsung internal tool to configure the NLU.

Outcomes of the project: It was not one complete project that had a final outcome. The team was very "result-oriented", so we had weekly subtasks that we finished.

Major Learning Outcomes: Learning about Samsung internal procedures for handling NLU processes. Some bugfixing. Not many coding skills that transfer into other jobs.

Details of papers/patents: None. This team (Intelligence team, NLU subteam) had no scope for patents or original research.

Brief Description of working environment, expectations from the company: Korean work culture and R&D work culture is not for everyone. Work is often done in rather inefficient manner and the company puts restrictions people will find inconvenient (like no laptops/pen drives to "minimum 9 hours of work per day"). In terms of PPO opportunities etc, the package offered differs based on your campus (so only Pilani campus students should apply, pay wise). A lot depends on which teams you are assigned to

because interns have little choice in what opportunities they can explore. (My team was very result oriented so there was no scope to pursue research. Another team had only research opportunities but not corporate exposure). The company overall is pretty mediocre in terms of overall quality of people working. Ratio of average employees to people you can learn from is lower than expected.

Name: ABHILASH DODLA (2013AAPS248H)

Student Write-up

Short Summary of work done during PS-II: Washer agent is an NLU agent being developed for "Washing Machine". This agent will contain NLU agent implementation and following are the expected tasks: - Understanding the VUI document used for requirements capturing. - Develop new NLU commands in Washer domain based on the requirements. - Get complete understanding of command development, tag handler development, and response generation and their implementation. - Get complete understanding of various data retrieval technique and their implementations.

Tools used (Development tools - H/w, S/w): Voicebox Software.

Objectives of the project: NLU Side implementation.

Outcomes of the project: NLU Side implementation.

Major Learning Outcomes: OO Visualization, XML, Json, Python, C++.

Brief Description of working environment, expectations from the company: Work Environment was good. Work given was also good, excellent interaction with the manager and other employees. The only issue is with the policy of the company to retain the interns even though they have worked hard and have contributed to the company.

Name: ANIL BHAN ABHISHEK (2012B4AA937H)

Student Write-up

Short Summary of work done during PS-II: TCP/IP stack optimizations for IoT devices/ RS/RA module design for IPv6.

Tools used (Development tools - H/w, S/w): Microsoft Visual Studio, Wireshark packet Capture, Source Insight code editor, Beyond Compare.

Objectives of the project: Objective of first part of the project was to suggest optimizations we could make to the existing TCP/IP stack to improve its performance. Objective of the second part of the project was to design a Router advertisement, Router Solicitation module for multicast testing by the company.

Outcomes of the project: Objectives of the projects were achieved. Suggestions were made for possible implementations of optimization modifications but testing was postponed for a later stage. Design of RS/RA module was completed successfully.

Major Learning Outcomes: Deep understanding of network protocols and how different layers in the network stack function. Also increased coding proficiency in C.

Brief Description of working environment, expectations from the company: Working environment was very cordial. People working at the organisation are extremely technically competent and there was a lot to learn from them. They allow you to work at your own pace and don't burden you with unrealistic deadlines. Even if you do happen to miss a deadline or two they don't make a fuss. Overall a pretty good work environment which encourages learning more than tangible deliverables.

Name: VENKATA SIVA SAI SOWDITH V (2013AAPS228H)

Student Write-up

Short Summary of work done during PS-II: Development of APIs on Android Platform on Android Studio.

Tools used (Development tools - H/w, S/w): Samsung IRIS tab, Android Studio, Eclipse.

Objectives of the project: Implementation of registered device APIs onto existing sample UIDAI app.

Outcomes of the project: Release of Indian Identity Authentication App.

Major Learning Outcomes: Working on Android Studio and Code testing.

Details of papers/patents: Aadhaar Card authentication API.

Brief Description of working environment, expectations from the company: Work Environment is great with not much stress on interns at least. They expect us to be good at coding and they care of the rest in helping us learn.

PS-II Station: Seagate Technology HDD (India) Pvt. Ltd., Bangalore

Student

Name: SURABHI VATSA (2011HS12491P)

Student Write-up

Short Summary of work done during PS-II: Set up a web application for efficient triaging of log files and database.

Tools used (Development tools - H/w, S/w): Django REST framework and Angular2.

Objectives of the project: To support efficient triaging of log files generated by their product.

Outcomes of the project: A web-based tool which downloads, unzips if needed, and parses log files based on user query.

Major Learning Outcomes: Django REST framework Angular2 HTTP services deployment of application on server.

Brief Description of working environment, expectations from the company: Working environment was very supportive. Mentors and managers were easily approachable and helped whenever needed. They encouraged learning and gave as much time as required to acquire the skills required.

PS-II Station: Symantec Software Solutions Pvt. Ltd - Data Analytics, Bangalore

Mentor

Name: Kunal Patel

Comment: Work done by student is good, sincere and professional in the approach and very hard working. Being adaptable from college to industry environment and punctual in all deliverable is expected of the interns.

Name: Ashish Dhawan

Comment: Clarity in the work done by the intern with innovative solutions is much appreciated. The thinking ability and articulation of open suggestions to solve blockers in project is seen in the intern and is commendable.

Name: Prasad

Comment: Work done by the interns are good and they are proactive, punctual in responding back, deliverable. Expectations from interns would be to align their way of thinking professionally w.r.t to the expectations of the project requirement and basics programming skills are required.

Name: Sankalp Dubey

Comment: Work done by the intern is good and he was able to achieve the allotted requirements in time. Expectations form students are: Good presentation and communications skills, Technical skills in

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programming data structures and coding them, expect a short learning curve of maximum 5 weeks to acquire skills in internal tools/ technology used in the organization.

Faculty

Name: Raja vadhana P

Comments: Industries expect students to be adaptive, proactive, quick learners and a professional in deliverable. With respect to technical skills clear understanding and expertise in common technologies like JAVA, J2EE, Database, HTML, few Scripting languages are expected of interns.

Student

Name: SOUMYA SUCHARITA (2013A7PS007P)

Student Write-up

Short Summary of work done during PS-II: I am working on a live project which is on building a search and aggregation application for big data. I worked on various aspects of the project - from ingestion of real time data to automation of data validation. I have also worked on removing duplicate data from a distributed data store like Elasticsearch.

Tools used (Development tools - H/w, S/w): Bash scripting, Elasticsearch, Apache Hive, Apache Storm.

Objectives of the project: The live project I am working on is about building a search and aggregation application for big data.

Outcomes of the project: The live project is about to go into production stage.

Major Learning Outcomes: I have experienced agile software development. My mentor was very helpful and guided me throughout the project. I talked to a lot of knowledgeable people in particular technical domains, especially big data and scripting. I have learned to work with deadlines and learn on the go.

Brief Description of working environment, expectations from the company: The working environment is supportive and friendly. But depending on the project you are on, there might be hard deadlines and a lot of pressure. In general, knowledge of OOP concepts and hands-on with Java is a requirement for almost every team here.

Name: ANSHUL R. (2013A7PS114G)

Student Write-up

Short Summary of work done during PS-II: Reliability, fault tolerance and optimizations in stream processing. Architecting workarounds for dynamic topology modification in Storm and Trident.

Tools used (Development tools - H/w, S/w): Storm, Kafka, Spark, Hadoop, HBase, Scala and Java.

Objectives of the project: Implement fault tolerance for stream processing with Kafka and Spark.

Outcomes of the project: Implemented and optimized system with a performance gain of 113% on sample data.

Major Learning Outcomes: Knowing the inner workings of the big data stack provides insight into utilizing the stack better and writing optimized code in the first iteration.

Brief Description of working environment, expectations from the company: Very friendly, enthusiastic colleagues. Not hectic for the most part. Great hands-on learning experience. Expect to get work if proactive.

Name: HARISH TUNDWAL (2012B4A7708P)

Student Write-up

Short Summary of work done during PS-II: I was in Gateway Security team (VIP Team) and my work mainly covered the incomplete as well as new POCs (Proof of Concepts). I started by testing a 3rd party SDK which provides on authentication based on behavioral analysis of the user. I created sample application on both android and iOS platforms using the SDK and tested the efficiency of the SDK. Later I worked on another 3rd party SDK of similar kind. Then I was involved to explore Perfecto, which is a cloud-based platform for web, mobile & IoT software testing. Later, I created custom keyboard for one of Symantec's android application and Today-Widget extension for the corresponding iPhone application. Finally, I created a web application on Node.js (deployed on AWS) and an iPhone application to demonstrate the functionalities of Symantec's VIP CDK to Symantec's customers.

Tools used (Development tools - H/w, S/w): Xcode, Android Studio, Eclipse, Zeplin, SoapUI, Perfecto and devices (Mac, iPhone, Android devices and Verisign token), Symantec VIP CDK and other 3rd party SDKs.

Objectives of the project: 1. Build sample android and iOS applications testing the functionality of some 3rd party SDKs. 2. Explore the usage of Perfecto for unit testing of applications. 3. Build custom keyboard for android and today-widget extension for iPhone applications. 4. Build a web application

(Node.js) and iPhone application to demonstrate Symantec's VIP CDK's capabilities to Symantec's customers.

Outcomes of the project: Successfully tested and evaluated all 3rd party SDKs. Explored Perfecto and how to use it and reported to the team. Built custom keyboard and today-widget extension for android and iPhone applications respectively. Built web application and iPhone application to demonstrate Symantec's VIP CDK's capabilities to Symantec's customers.

Major Learning Outcomes: Got to know about existing technologies and modern security features used by major security companies. Learnt iOS development (Swift 3, Objective C, Keychain access, Security in iOS devices). Learnt android development (Android Studio). Learnt to create widgets and extensions in android and iPhone applications besides making general applications. Learnt Node JS, Express JS, Bootstrap, and about AWS Deployment.

Brief Description of working environment, expectations from the company: The working environment at Symantec is the best a graduating intern can ask for. We were given ample flexibility in order to adapt, learn and produce the output. We had access to most of the resources that we needed and were helped by each and every team member in case of any technical or other difficulties. The company expects that we working on the pending pool of POCs (projects), where we can also provide any suggestions to improve the efficiency of their products and if we want we can work on the same too. In a nutshell, Symantec asks an intern to keep themselves involved in some or other project and provide important feedback/suggestions (if any) from them.

Name: DHAIRYA SANGOI (2012B4A7640P)

Student Write-up

Short Summary of work done during PS-II: Developed a strong authentication for windows login using Universal Second Factor (U2F).

Tools used (Development tools - H/w, S/w): Visual Studio.

Objectives of the project: Provide a strong authentication mechanism for windows login using a two factor authentication with the help of Universal Second Factor (U2F) technology.

Outcomes of the project: Strong authenticator for windows login.

Major Learning Outcomes: Detailed analysis of how login in Windows works, how to provide a custom login mechanism for windows, understanding U2F protocol.

Brief Description of working environment, expectations from the company: As of now, Symantec is not giving PPO to any interns. They have the requirements for candidates with experience in this field. Symantec as a company is employee friendly. The staff here is helpful and can help you in case you have any difficulties with the projects assigned. The working hours are 10 to 5. But, it's up to you, as no one monitors you. But this also depends on the manager you are assigned to. You get to work on latest technologies: Machine learning, U2F, to name a few. There are also projects related to android and ios app development. As of perks, you don't have to worry about the travel, since Symantec have their cab system. For lunch, it's not provided by Symantec, but there is Bay area in the campus, wherein you have quality restaurants. But Symantec has cafeterias, where you get snacks. So you can have your breakfast in cafeterias.

Name: Rajath S (2012B5A7589P)

Student Write-up

Short Summary of work done during PS-II: (1) Design and Development of a cloud-ready full-stack web application to automate the installation of SSL certificates for websites/applications hosted on Amazon AWS Cloud service. (2) Development of a Symantec Partner Portal to generate reports and analysis using Modern UI frameworks.

Objectives of the project: (1) Design and Development of a cloud-ready full-stack web application to automate the installation of SSL certificates for websites/applications hosted on Amazon AWS Cloud service. (2) Development of a Symantec Partner Portal to generate reports and analysis using Modern UI frameworks.

Outcomes of the project: Two production ready software applications.

Major Learning Outcomes: Practical Experience in Software Design and Development lifecycle.

Brief Description of working environment, expectations from the company: Intern projects are self-contained and they are independent of the work carried out by mentor/managers/teams. Not too much importance attached to intern projects and hardly any time is devoted by the manager to address your concerns or to monitor/guide the project development. Nature of project is pure software development.

Name: ASHISH PRATAP SINGH (2013A7PS161H)

Student Write-up

Short Summary of work done during PS-II: Developed a cross platform mobile app.

Tools used (Development tools - H/w, S/w): phonegap, nodejs.

Objectives of the project: To send ssl/tsl certificate renewal notifications.

Outcomes of the project: project almost completed and currently in testing phase.

Major Learning Outcomes: Learned about mobile app development which can run on all the platforms from a single source.

Brief Description of working environment, expectations from the company: Working environment was good, people were very nice and helpful.

Name: SHARTHAKMISHRA (2013A7PS049P)

Student Write-up

Short Summary of work done during PS-II: There were multiple projects I worked on during my internship. The first was building an automated testing framework for a Company product. The second project was helping in the development of an API gateway.

Tools used (Development tools - H/w, S/w): Java, Spring Framework, Lua and Python.

Objectives of the project: Automated Testing Framework for Risk Insight.

Outcomes of the project: Succesfully built the test framework.

Major Learning Outcomes: Learnt a lot about test frameworks.

Brief Description of working environment, expectations from the company: The Company is a good place to work and learn. My mentors and managers were supportive through out the project.

PS-II Station: Symantec Software Solutions Pvt. Ltd - Data Analytics, Pune

Student

Name: NAMAN RAJBAID (2013A7PS064P)

Student Write-up

Short Summary of work done during PS-II: My project was on finding malicious URL using machine learning. I was given URL and the algorithm will tell whether it is good or bad.

Tools used (Development tools - H/w, S/w): Mysql, Ubuntu.

Objectives of the project: Finding malicious urls automatically so that it will save time of SREs.

Outcomes of the project: Algorithm was giving result with 75% accuracy.

Major Learning Outcomes: Neural network, support vector machine.

Brief Description of working environment, expectations from the company: Work life balance. Team is good and friendly. More of the work is about analysis.

Name: SHUBHAM JAIN (2013A7PS049G)

Student Write-up

Short Summary of work done during PS-II: I did a R&D project to identify the intention of a non-PE file. Built a parser for JS. I was not able to get the original project to work but I modified my parser to find the complexity of any function call in a file that helps in identifying obfuscation which can be further developed to identify malicious files.

Tools used (Development tools - H/w, S/w): NodeJS esprima library, Python BeautifulSoup library.

Objectives of the project: Identify what a nonPE file is trying to do without executing the file.

Outcomes of the project: We were unable to get results with ML or NLP techniques. Though it might be possible to identify if the file is obfuscated or not.

Major Learning Outcomes: Doing this project I learnt about compiler design, ML and NN.

Details of papers/patents: If the company decides to use the idea of using complexity as a measure to decide if a file is malicious or not then there is a possibility of patent.

Brief Description of working environment, expectations from the company: Working environment is fairly nice, no work timings are there, most projects are expected to be of ML, Hadoop related instead of exact security related as expected by most people.

Name: KANDRIKA VENKAT ADITYA SARMA (2013A7PS165H)

Student Write-up

Short Summary of work done during PS-II: Developed a front end for editing digital certificates.

Tools used (Development tools - H/w, S/w): Java, XHTML (primefaces).

Objectives of the project: Same as summary.

Outcomes of the project: Same as summary.

Major Learning Outcomes: Learnt about software integration and how to develop an intuitive front end design for a complex process.

Brief Description of working environment, expectations from the company: Laid back, no strict timings. Just deliver your project and done. (This depends on the team you are assigned to. Other team was a bit strict about project deadlines and had more work).Learning curve depends on your project.

Name: SHUBHAM JAIN (2013A7PS049G)

Student Write-up

Short Summary of work done during PS-II: My project was to identify the intention of a nonPE file. To find what a file is doing I extracted all the standard function calls that a file is trying to make and also extracted the documentation of the language from appropriate sources. The next thing was to extract meaning from the documentation tree of the file thus prepared. We tried to search for ML or any NLP technique that might be deployed for this purpose but no such techniques were there. So the main project wasn't a success. As a by product of the project, we were able to identify if a file is malicious or not using a new criteria.

Tools used (Development tools - H/w, S/w): Esprima, BeautifulSoup.

Objectives of the project: Identify the intentions of a non-PE file.

Outcomes of the project: Main project that was assigned became unsuccessful but we identified a new factor to identify a category of potential malicious files.

Major Learning Outcomes: I learnt about JS, web scraping, how to keep our system secure and online attacks.

Brief Description of working environment, expectations from the company: Working environment was very comfortable. There are flexible timings, mentors are encouraging. Projects can be expected from machine learning, data mining and cryptography fields with high potential.

Name: Nishant Udgaonkar (2014H313060H)

Student Write-up

Short Summary of work done during PS-II: Ported a pre existing search solution to an open source platform.

Tools used (Development tools - H/w, S/w): Java.

Objectives of the project: Faster searching.

Outcomes of the project: Ongoing.

Brief Description of working environment, expectations from the company: Company wants work done so that they can include it in the next release of the product.

PS-II Station: TapChief, Bangalore

Student

Name: NAMAN RAJBAID (2013A7PS064P)

Student Write-up

Short Summary of work done during PS-II: Business Development.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: TapChief Expert Signup Page.

Outcomes of the project: Well recognized by administration.

Major Learning Outcomes: Growth in Startup.

Brief Description of working environment, expectations from the company: Stable, helpful, fast paced.

PS-II Station: Tata Digital Health, Bangalore

Student

Name: MUDIT DANGI (2013A7PS036G)

Student Write-up

Short Summary of work done during PS-II: Worked on Web development and shell scripting.

Tools used (Development tools - H/w, S/w): Eclipse, Mirth connect, Struts, JSP and pgAdmin.

Objectives of the project: To modify the existing OrgAdmin web page.

Outcomes of the project: The web page was ready with 3 additional tabs and few modifications in the existing pages.

Major Learning Outcomes: JSP, Struts, PostgreSQL.

Brief Description of working environment, expectations from the company: The co workers are really supportive and you get to learn a lot about actual development process in a startup.

Name: VIREN JYOTHIRGH BANDA (2012B5A7585H)

Student Write-up

Short Summary of work done during PS-II: My work was on datawarehousing. I had to set up a warehouse which crons itself every day and fetches the data of all the clinics, so that the analytics team can do their analysis. Along with this, I had to generate reports for the business team. These reports had to be automated and written into a Google spreadsheets.

Tools used (Development tools - H/w, S/w): Java, Hibernate, Postgres, Google spreadsheets API.

Objectives of the project: To build a Data Warehouse.

Outcomes of the project: Built the warehouse and also automated the report generation.

Major Learning Outcomes: Java, SQL

Brief Description of working environment, expectations from the company: It's a startup environment so whatever we work on has an impact. The work is good, and the manager I had Mr. Gaurav Pathak, was a knowledgeable person. It was a nice experience.

Name: MUKUL KOTHARI (2013A7PS071G)

Student Write-up

Short Summary of work done during PS-II: I Designed a SSO system for their applications from scratch which would act as central login system for all the applications and all the data would be stored here.

Tools used (Development tools - H/w, S/w): Spring boot, Spring JDBC, JBoss, OpenLDAP, postgres, REST services

Objectives of the project: To develop Single Sign on (SSO) system for the existing applications.

Outcomes of the project: By the end of the PS2, we had a working SSO platform and we had done its integration with Blog and Consumer application.

Major Learning Outcomes: Apart from the immense technical learning, I also got to know about the business side of the product, how all the teams coordinate on multiple projects to meet the demands.

Brief Description of working environment, expectations from the company: The people in the company were very jovial and they helped me out on numerous occasions, be it technical or any trivial thing. Whenever I was stuck somewhere in the project, they guided me in the right direction and I always gained some knowledge whenever I interacted with them.

PS-II Station: Tata Motors Ltd, Jamshedpur

Student

Name: V.ANIERUDH (2013ABPS625P)

Student Write-up

Short Summary of work done during PS-II: 1) Rectifying the tool designs in accordance to the industry prescribed rules and regulations 2) Establishing a product lifecycle management system for designs of Signa and Prima trucks' tools and fixtures 3) Database management of computer aided designs using SEIMENS Teamcenter

Tools used (Development tools - H/w, S/w): CATIA V5, SEIMENS TEAMCENTER and Product Lifecycle Management.

Objectives of the project: 1) Identification of various die components 2) Step by step correction of design errors 3) Implementing an error proof product lifecycle management system for the designs 4) Capturing all mistakes in a presentation and explaining it to senior employees.

Outcomes of the project: 1) Documentation of errors in the manufactured cab of TATA Signa along with the worker who was responsible for its manufacturing. 2) Preparation of Reference Manual for PLM Establishment 3) Letter to Marketing Head of TATA Motors CVBU for participation in DAKAR rally held in Morocco to improve the brand image in the international market 4) Comprehensive marketing report sent to the Sales Head Mr. Ashesh Dhar for setting up distribution networks and initiate marketing campaigns in Asansol, Kalimpong and Jhargam 5) Detailed report on the distinctions between sketch and actual prototype of TATA Tigor have been submitted to the design head.

Major Learning Outcomes: Data Collected: -1) List of parts in a die 2) Nomenclature rules 3) Positioning of parts in the die 4) Prevalent PLM establishment techniques 5) Categories of design errors corresponding to each part Problem Solving Techniques: - 1) Established a set of guidelines for systematic design correction- This was used as a starting source of information 2) CATIA designing 3) SEIMENS Teamcenter trouble shooting techniques 4) Unsolved problems were addressed to senior designers and recommendations were obtained.

Brief Description of working environment, expectations from the company: Horrible working environment!! Not in the company but in the hostel provided by them. Double sharing rooms are given and basic vegetarian food is of extremely poor quality (multiple times worse than Pilani Campus mess food). Transportation services during emergency times are nil. I could not find an auto to go to hospital at 10 pm when I was bitten by a dog so I had to go walking. The hostel does not even has a proper drinking water purifying system. There is one cheap-age old aqua guard system which is not of much use. I had to purchase mineral water bottles. Inmates drink, smoke, take drugs and do other unethical activities openly in public making life even worse for professionals who want to make something useful out of their lives. Once again, plant is amazing but living conditions are not. Company has a bright future but its employees do not, because first-major share of earnings goes into charity and only the leftover money is for employees. Warning: - Do not join if you are a vegetarian or a decent career oriented person with straight habits.

Name: NIKHIL SURISETTI (2013A4PS493H)

Student Write-up

Short Summary of work done during PS-II: Study of productionsation of Bs-IV vehicle, various stages, testing procedures etc.

Objectives of the project: Study the productionsation of BS-IV VEHICLE.

Outcomes of the project: Productionisation of vehicle without any problems.

Major Learning Outcomes: Working process of introducing new model for productionisation, process flow diagram preparation, change matrix, various testing procedures.

Brief Description of working environment, expectations from the company: Best working environment.

PS-II Station: Tau Films India Pvt. Ltd, Hyderabad

Student

Name: MUDIT DANGI (2013A7PS036G)

Student Write-up

Short Summary of work done during PS-II: Implemented dependency resolution and scheduling algorithms for render farm Flask app for managing schema migration of studio products Designed and implemented cleanup policies and algorithms for deprecating products Reworked UI/UX of a key component for Tau's in-house production management software Implemented bots for schema migration and render farm management Developed a suite of productivity tools for studio management Designed and implemented a proof-of-concept for a node-based visual scripting engine for studio support tasks Engineered an alternative large file transfer solution using GDrive as backend Designed a set of caching policies for production tracking data Was jointly involved in setting up VFX pipeline in Los Angeles studio.

Tools used (Development tools - H/w, S/w): Maya, Nuke, Houdini, Syntheyes, Mari, Photoshop, 3DEqualizer, Arnold.

Objectives of the project: Develop and support all technology relating to VFX production. This spans multiple areas - computer graphics software, graph algorithms, render farm management, Linux toolchain, database systems, web services, software architecture, data security, UI/UX design etc. Come up with quick, working solutions to production problems while respecting good coding practices and design principles.

Outcomes of the project: 1. Developed a large suite of productivity tools at all levels (management, systems, pipeline, artists), being used live in production. 2. Offered and implemented practical solutions to key technological systems - cleanup and archival, transfers, notifications, farm management etc. 3. Considerable improvement in in-house production tracking software - both back-end and front-end.

Major Learning Outcomes: Stronger understanding of the application of graph algorithms, design patterns and software architecture.

Brief Description of working environment, expectations from the company: Even as interns we are thrown straight under the production bus. All code we write is meant for live production. We get a huge say in the development of the pipeline, and our solutions to improve it have been taken up.Development forces us everyday to go beyond our comfort zones and explore a field we've never tried before. We've written web services, designed and implemented database schemas, dabbled in creating good UI/UX for artists, applied our classroom graph algorithms to production problems, architected an event-based notification system, managed a render farm and a whole lot more.We've learnt a lot during the span of our PS program. We've learnt the great deal of effort and hardwork artists put in to make a VFX heavy movie come to life. We've seen first hand the enormous technological resources which are required to support a big budget production, and are proud to have played a major role in its development.The company expects us to contribute as much as a regular employee and treats us as such. We are given a lot of freedom to explore interesting solutions and ideas to bring to the table.

PS-II Station: Tolexo Online Pvt Ltd, Noida

Student

Name: NIKITA MATHUR (2015H149228P)

Student Write-up

Short Summary of work done during PS-II: Tolexo - Digital marketing. Indiamart - Category mgmt, Taxonomy correction.

Tools used (Development tools - H/w, S/w): Google Analytics, DM tools - Moengage, Mobizdom, Criteo, Responsys (Oracle), Gladmin (Indiamart's in-house category mgmt tool).

Objectives of the project: To increase the conversion rate, decrease the bounce rate at every step of the shopping funnel.

Outcomes of the project: Better CVR, reduced negative feedback.

Major Learning Outcomes: Creation of online marketing campaigns, organisation of products on an eCommerce website catering to both the B2B as well as the B2C segments.

Brief Description of working environment, expectations from the company: The working environment is relaxed, colleagues are supportive and the supervisors are helpful. The opportunities to learn the eCommerce business (both B2B, B2C) are immense.

Name: MANOGNA.S (2015H149279P)

Student Write-up

Short Summary of work done during PS-II: I started my PS with Tolexo, a subsidiary of Indiamart in the digital marketing team. I was responsible for analyzing the shopping funnel data and assist in formulating email marketing strategies. As the company's online operations shut down we were shifted to the parent company Indiamart. At Indiamrt i was in the product development team my project included analysis of different CTA's and designing of mock ups for different products.

Tools used (Development tools - H/w, S/w): Google Analytics, Rb and Gamooga.

Objectives of the project: To understand the functioning of digital marketing in an e-commerce setup.

Outcomes of the project: Understood how to manage different marketing campaigns and measure the outcomes.

Major Learning Outcomes: Digital Analytics.

Brief Description of working environment, expectations from the company: I was very happy with the work i was doing in tolexo s i was getting to learn something new everyday, but at Indiamart the work progresses very slowly and no proper guidance is given as everybody are busy with their own tasks. We are not encouraged to explore new ideas and options.

Name: KASHISH ARORA (2015H149247P)

Student Write-up

Short Summary of work done during PS-II: I work in process constituting 3 vendors whose operations are to be managed. I have been given the responsibility to manage operations of 1 vendor and achieve daily targets

Tools used (Development tools - H/w, S/w): Sql.

Objectives of the project: Learning vendor management in terms of financial and operations optimisation of the process.

Outcomes of the project: I am able to deliver more than targets given, process improvements are suggested that helped reduce cost for nearly 30k a month for 1 vendor.

Major Learning Outcomes: Negotiations skills, vendor management skills, team management, leadership, sql, dala analysis.

Brief Description of working environment, expectations from the company: Working environment is really good, team members and management are cooperating, safety factors are there, and multiple facilities have been provides.

PS-II Station: Tonbo Imaging Pvt Ltd. - Image & Video Processing, Bangalore

Faculty

Name: Rekha.A

Comments: The advantage of practice school is making students comprehend the industry and its needs even before going to a job and build their career. It helps in enhancing their skills by working on a live project but also prove advantageous to the organization by their innovative nature. The Students come from various discipline and work in various fields. By guiding the students from various branches of engineering like mechanical has given me an insight into the nature of work going on and the technology used. The students were given the skill set gap training so they are prepared before they come for the internship program. The students worked on various projects on image processing, embedded systems, physical design, communication, tracking of objects in motion, quality and reliability tests for the products, design of thermal management systems , verification and Validation etc. Interaction with the mentors helped in identifying the skill gap courses and set of basic courses need to work on the projects and the same was communicated to the students to refresh such courses before they join for internship. This helped the students to quickly ramp up with the work and start contributing towards the project. Also shared some of the e-books for system verilog, video basic books. PS II was truly enriching for the students as they got an insight into the latest tools technologies being used in the industry by working on the live projects .

Student

Name: AKSHAY VENKATESH (2012B2A4737P)

Student Write-up

Short Summary of work done during PS-II: Top-down mechanical engineering design of various systems.

Tools used (Development tools - H/w, S/w): Solidworks.

Objectives of the project: Design and fabrication of various systems.

Outcomes of the project: Successful design and fabrication of various systems undertaken.

Major Learning Outcomes: Practical application of various concepts (heat transfer, production techniques, mechanical vibrations, kinematics and dynamics etc) in machine design of different systems. CAD modelling and machine drawing. Hands on experience in 3D printing.

Brief Description of working environment, expectations from the company: Very flexible and comfortable work environment. A lot of interesting work to do and thing to learn. Colleagues are also very friendly and helpful. You are expected to work diligently and have a strong understanding of your subjects. Overall a very good experience.

Name: MUGALODI RAMESHA RAKESH (2013A8PS362P)

Student Write-up

Short Summary of work done during PS-II: Multispectral real time Panorama stitching on Jetson TX1, ultrafast VideoStabilization for snapdragon 210/805.

Tools used (Development tools - H/w, S/w): CUDA, OpenCL, C++, Android Studio, Android NDK, Snapdragon/Adreno and Nvidia profilers.

Objectives of the project: As described in the title.

Outcomes of the project: Completed both the projects well ahead of time with good quality results.

Major Learning Outcomes: CUDA, OpenCL and the entire field of parallel programming.

Brief Description of working environment, expectations from the company: Good work culture and helpful employees, huge scope for learning, better than many big companies in terms of work quality. Interesting projects here, great company for learning new and great stuff.

Name: RAVINDRA KUMAR SINGH (2013A3PS320G)

Student Write-up

Short Summary of work done during PS-II: Hardware design of StagHound TI and testing and verification of StagHound.

Tools used (Development tools - H/w, S/w): Cadence, Linux.

Objectives of the project: To design hardware board.

Outcomes of the project: Product design prototype is completed.

Major Learning Outcomes: Hardware design flow, embedded system.

Brief Description of working environment, expectations from the company: It was good experience as we have flexibility to work on area we want.

Name: AISHWARYA LEKSHMI C (2013A8PS388G)

Student Write-up

Short Summary of work done during PS-II: Developing an Os+d Display Manager for a Thermal Imaging Camera Using Cairo.

Tools used (Development tools - H/w, S/w): Cairo, Pango, freetype.

Objectives of the project: Integrating hardware OSD (on screen display) and Cairo to reduce CPU usage.

Outcomes of the project: Reduced CPU usage by replacing Software OSD by hardware OSd.

Major Learning Outcomes: Learnt to work in an embedded environment. Learnt to use softwares like wireshark and to code in Shell, C and C++.

Brief Description of working environment, expectations from the company: The Company gives good projects in Embedded. This is the best option if one is looking for working in both hardware and software fields.

PS-II Station: Toshiba Software (India) Pvt Ltd, Bangalore

Faculty

Name: Rekha.A

Comments: The advantage of practice school is making students comprehend the industry and its needs even before going to a job and build their career. It helps in enhancing their skills by working on a live project but also prove advantageous to the organization by their innovative nature. The Students come from various discipline and work in various fields. By guiding the students from various branches of engineering like mechanical has given me an insight into the nature of work going on and the technology used. The students were given the skill set gap training so they are prepared before they come for the internship program. The students worked on various projects on image processing, embedded systems, physical design, communication, tracking of objects in motion, quality and reliability tests for the products, design of thermal management systems , verification and Validation etc. Interaction with the mentors helped in identifying the skill gap courses and set of basic courses need to work on the projects and the same was communicated to the students to refresh such courses before they join for internship. This helped the students to quickly ramp up with the work and start contributing towards the project. Also shared some of the e-books for system verilog, video basic books. PS II was truly enriching for the students as they got an insight into the latest tools technologies being used in the industry by working on the live projects .

Student

Name: AKASH ATUL BOGHANI (2013A3PS681G)

Student Write-up

Short Summary of work done during PS-II: Firmware development using embedded C. Code optimization, algorithm development, design and testing.

Tools used (Development tools - H/w, S/w): Linux, GCC and Visual Studio.

Objectives of the project: Contribution to code optimization.

Outcomes of the project: Expected contribution made.

Major Learning Outcomes: Proficiency in programming, learning of storage electronics.

Brief Description of working environment, expectations from the company: Supportive mentors, rigorous work schedule, learning possibilities high.

PS-II Station: UPGRAD, Mumbai

Student

Name: MAYANK MUDGAL (2015H149293P)

Student Write-up

Short Summary of work done during PS-II: My work is mainly to do primary and secondary research to identify new program opportunities and also to identify monetisation for existing programs. Apart from this I need to coordinate with different departments in order to enhance the online learning experience for the existing cohorts.

Tools used (Development tools- H/w, S/w): MS-EXCEL, Powerpoint, Word, Digital marketing knowledge.

Objectives of the project: To add new programs in UpGrad's portfolio and improve the existing program in order to increase the enrollments for the existing cohorts.

Outcomes of the project: Introduce 2 new programs.

Major Learning Outcomes: Get different views and techniques to conduct result oriented secondary research, How to use marketing funnel and digital marketing tools.

Details of papers/patents: Project report on research techniques and how I initiate my research to reach at some conclusive outcome.

Brief Description of working environment, expectations from the company: Work environment in my team is very friendly, my mentor is very supportive and until and unless you completed the work which is allotted to you, no one question you for anything. Flexible working hours is an added advantage for a city like Mumbai. I expect that company can enroll the interns in one of their online course which can also be part of the evaluation and it helps student to make this time even more productive by acquiring new skills. Some of the courses like digital marketing, product management are very popular in market and anyone who come tomthis PS station should get the extra perk of completing any such course in these 6 months.

Name: ARNAB DAS (2013A7PS020G)

Student Write-up

Short Summary of work done during PS-II: Creating a spam detection model that detects irrelevant content on the discussion forums of the online education app. Exploring web search APIs and semantic similarity APIs. Implementing a search to obtain similar questions on the discussion forums. Creating an application to collect feedback on whether selected pairs of questions are similar or not (to be used in training the similarity model later). Deploying the application and obtaining statistics from the user feedback. Refining the search algorithm to match its result to that of the user feedback to the best possible extent. Integrating the search function into the server application. Making necessary changes to the web application to collect feedback from TAs on the similar question search as and when the similar questions are displayed on the question tickets. Using the collected feedback to further train the search.

Tools used (Development tools - H/w, S/w): Python, Django, Postgres, Natural Language Processing Toolkit, NumPy, Sci-kit and Wordnet.

Objectives of the project: To develop and implement a similarity checking algorithm (with learning) to be used in searching similar questions in the discussion forums of the online courses provided by the organisation. Adding the searching and feedback collection to the server application. Develop a model for spam detection to filter irrelevant content on the discussion forums.

Outcomes of the project: A search functionality which adds similar questions asked on the discussion forums on the question tickets to be addressed by the TAS the similar question notes also containing an interface to collect feedback to help improve the search and similarity algorithm.

Major Learning Outcomes: Natural language processing and its use in finding semantic similarity. Use of machine learning algorithms to combine various features such as different similarity measures or different text features in case of spam detection. Use of databases, caches and worker processes in server applications.

Details of papers/patents: Sentence Similarity Based on Semantic Nets and Corpus Statistics.

Brief Description of working environment, expectations from the company: Flexibility in the choice of project to be undertaken. Suitable conditions and resources provided by the company to work on the project. Active assistance and feedback in developing and testing from mentors.

PS-II Station: Veritas Software Technologies India, Pune

Faculty

Name: S.Raghuraman

Comments: Students are expected to be punctual, self disciplined, well mannered, having tolerance to ambiguity, willing to express themselves besides technical skills that BITS is imparting. PS-II intern is supposed to settle down quickly and contribute to the organization in short notice.

Student

Name: KARTIKEY MULLICK (2013A8PS785H)

Student Write-up

Short Summary of work done during PS-II: The work mostly consists of enterprise product development and testing using various software tools.

Objectives of the project: To add a new feature to the enterprise product regarding backup integrity.

Outcomes of the project: Feature implemented.

Major Learning Outcomes: Learned the software development cycle from various stages of development to various types of testing.

Brief Description of working environment, expectations from the company: The working environment is warm and friendly. The company as a whole is a good place to work in. Quite a few departments have vacancies, so getting a PPO is probable.

Name: JUHI VINAYAK WAGLE (2013A8PS346G)

Student Write-up

Short Summary of work done during PS-II: Developed a web portal for the company where users can watch videos, ask questions, take courses and solve their doubts. Correspondingly, admins are able to make courses and submit answers to posted questions.

Tools used (Development tools - H/w, S/w): HTML, CSS, Javascript, Reactjs, Nodejs, Expressjs, Mongodb, Ant design, Git Bash.

Objectives of the project: To develop a web portal where users would be able to watch videos, ask questions, take courses and solve their doubts. Correspondingly, admins should be able to make courses and submit answers to posted questions.

Outcomes of the project: The portal with all required functionalities has been deployed. Extra features added are the 'login' access to the portal which is taken through the company ldap server and playing webex videos on site.

Major Learning Outcomes: Other than expertise in the use of the tools mentioned above, I gained valuable insight into - how to consider all possible exceptions and resolving for each, color schemes and user ease of access on web sites, the difference between expected quality of results from company and college, handling deadlines and accompanying pressure, agile methodology and scrum teams, company policies and formality expected in a work place, how to give effective demos and presentations before a huge audience.

Brief Description of working environment, expectations from the company: All company employees are extremely helpful and understanding. They are ready to spend extra time to explain and resolve intern doubts. They give buffer periods for an intern to learn and acclimatize to the tools before setting tasks and deadlines. There are some highly skilled employees who can easily solve any doubt placed before them. However, an intern needs to be proactive when asking for work. There are no strict timings, but there is daily reporting of progress.

PS-II Station: Vizury Interactive Solutions, Bangalore

Student

Name: H SABARINATH (2013A7PS043H)

Student Write-up

Short Summary of work done during PS-II: Inventory exploration and prioritization framework. Data Science project on ad inventory exploration for extracting true information. Prioritization involves using clustering - like techniques to segment inventories for enhanced economic utilities.

Tools used (Development tools - H/w, S/w): python libraries like pandas, numpy and sklearn, scikit, and ad-hoc algorithms.

Objectives of the project: Develop framework for extracting true information by increasing winrates on realtime bidding. Segment / Cluster inventories for better performance analysis.

Outcomes of the project: Results were supporting hypothesis for both exploration and prioritization.

Major Learning Outcomes: Re-targeting industry, ad-hoc data science and statistical algorithms, industrial data processing and manipulation techinques.

Brief Description of working environment, expectations from the company: Great place to work. Mentored by experts who're strong at academic and industrial background. Flexible work timings and good learning experience.

PS-II Station: VMware Software India Pvt. Ltd., Bangalore

Student

Name: POOJA RANI (2015H112171P)

Student Write-up

Short Summary of work done during PS-II: Automated test case for VnWare product that is Vmware identity manager. I have been part of live project testing for 1 month.

Tools used (Development tools - H/w, S/w): Intellij, Selenium, gitHub, Maven, java.

Objectives of the project: Creating regression test suite for vmware identity manager and deploying test on enviroments where it can trigger automatically and execute.

Outcomes of the project: Regression Test suite created for vmware identity manager product.

Major Learning Outcomes: Selenium, spring framework, testing.

Brief Description of working environment, expectations from the company: Project is not much challenging and assigned department is testing. Working time on project was the 4 month and rest of the time involved in manual testing so learning is not as expected.

Name: KRISHNAN. G (2012A4A7207G)

Student Write-up

Short Summary of work done during PS-II: Learned about the VMware SDDC stack. Also about the P2V converter product. Then tried to write jobs on their management platform to tie the two together. As of now, something or the other breaks at every step of the way.

Tools used (Development tools - H/w, S/w): Java, VMware internal software.

Objectives of the project: Implement a Proof of Concept for imaging+migrating a live physical machine directly to a VMWare cloud.

Outcomes of the project: Nothing as of now.

Major Learning Outcomes: Fundamentals of Virtualization (Compute, Storage, Network).

Brief Description of working environment, expectations from the company: I feel no expectations, and a lot of team members often work from home - Leaving me stuck for days on things that could have been resolved in minutes. This leads to a lot of frustration, motivation reducing to zero and a rant on the PS-II Chronicles.

Name: ARJUN VIJAYVARGIYA (2012B1A7733H)

Student Write-up

Short Summary of work done during PS-II: I worked on java platform on VMware identity manager inside End user computing department of Cloud R&D. I worked on Saleforce Single and Bulk API. I have to provision and deprovision the salesforce users. The work extended to AWS as I have to develop an API gateway from scratch. It involved working with some of the most important tools of AWS like AWS Lambda, AWS S3 bucket as well as AWS API gateway. This was my starting project. I worked on JNDI API as well as LDAP servers to retrieve directory data from remote LDAP. I worked on RBAC also which involved creating a new role in the department and integrating to their main code repository.

Tools used (Development tools - H/w, S/w): AWS, Intellij, Git, Putty and Postman.

Objectives of the project: Implement a Proof of Concept for imaging+migrating a live physical machine directly to a VMWare cloud.

Outcomes of the project: Nothing as of now.

Major Learning Outcomes: Fundamentals of Virtualization (Compute, Storage, Network).

Brief Description of working environment, expectations from the company: I feel no expectations, and a lot of team members often work from home - Leaving me stuck for days on things that could have been resolved in minutes. This leads to a lot of frustration, motivation reducing to zero and a rant on the PS-II Chronicles.

Name: V MADHUMITA MALVIKA (2013A7PS025G)

Student Write-up

Short Summary of work done during PS-II: I worked on an app called Data Centre Designer, part of the vCentre in the vSphere product suite of VMWare. I wrote rules and logic for the dynamically allocation of nodes and edges, and created an editable graph like datacenter network diagram for the user.

Objectives of the project: To make storage more efficient, to avoid redraws and dynamically position the various nodes relative to the parent node.

Outcomes of the project: The project makes it possible for users to design their data centres and the DevOps team will lay the networks accordingly. It enables easier visualisation of the overall network in a graph form, and the user can made edits to it as per his convenience.

Major Learning Outcomes: Front end development, exposure to network drawing libraries.

Brief Description of working environment, expectations from the company: VMware is known for its dynamic and challenging work environment. Frequent interactions with the manager and mentors, kT sessions whenever needed, projects which test your creativity and intelligence, a comfortable work place and cabin and well stocked pantry can be expected.

PS-II Station: Walmart Global Technology Services, Bangalore

Student

Name: AKSHAY JADIYA (2012B1A3805P)

Student Write-up

Short Summary of work done during PS-II: My work was to modify the code in some already written programs and create log files to record the logs related to queries, their start time, end time and type of query (Read / Write) in order to calculate the overall throughput of the database. After the analysis of the log files generated and calculation of the throughput, next aim was to increase the throughput by optimizing the code as well as the queries and also changing the overall data storage structure.

Tools used (Development tools - H/w, S/w): Hadoop/Hive/Python/SQL.

Objectives of the project: Optimizing the code to increase throughput of mysql Database.

Outcomes of the project: For the same 3 jobs the number of queries executed after the changes made were more than 4.5 times the number of queries that were executed before the changes that were made to the code and to the storage structure. This reflects a huge increase in the speed of query execution.

Major Learning Outcomes: Big Data/Hadoop/Hive/Python.

Brief Description of working environment, expectations from the company: The working hours are flexible. The team which I was allotted to was supportive. Initially they allowed me to learn the things I didn't know such as big data etc. Later on I was given a small work on a project and the team members were always in touch.

Name: PULKIT SHUKLA (2012B2A7781P)

Student Write-up

Short Summary of work done during PS-II: I was part of the logistic team at Walmart which develops the applications for handling the logistics at the warehouses of Walmart. I was given back-end tasks for server side applications developed. The server side code was written in Java and they use Vert.x for the back-end instead of more popular Node.js. I was also given the automation testing tasks for the backend.

Tools used (Development tools - H/w, S/w): Java, Vertx, cucumber, testing, Apache Frameworks, MongoDB.

Objectives of the project: Development of logistics solutions for the walmart order fulfillment.

Outcomes of the project: The project was not a single project but rather we developed several applications which were used by the logistics team. The code written also went into production and so it was used in the actual Distribution Centers in US.

Major Learning Outcomes: At the end of the internship, I was able to develop entire back-end side server applications. I learnt about vert.x which is far better than the popular Node.js. I also learnt about backend testing tools like TestNG, Cucumber, etc. MongoDB was used for the database and so I also learnt about no sql databases.

Brief Description of working environment, expectations from the company: The working environment at my team was excellent and the work was really good. But there were few teams which had no work at all, so it all depends on which team you are assigned to.

Name: AKASH SHARMA (2012B2A7771P)

Student Write-up

Short Summary of work done during PS-II: The work involved in my PS-2 internship at Walmart Labs was related to Elastic Search. The idea was to use Data analytics as a tool, to observe hidden patterns and observations in the data used by e-commerce companies. Initially SQL queries were used to extract the required fields and find relationships between them. Elastic search is a very easy to use tool, and

provides various visualisation softwares to be used on the top of it, hence making it easy to analyse the relationships.

Tools used (Development tools - H/w, S/w): Elastic search, logstash, Kibana (ELK stack), Java, and Apache Kafka.

Objectives of the project: Data analytics on business use cases using ELK stack.

Outcomes of the project: Elastic search was used to analyse the business use cases using ELK stack. Multiple business use cases were solved using visualisation using Kibana.

Major Learning Outcomes: By working on this project, I learnt new technologies such as Elastic search and ELK stack as a whole. Also by using results obtained from ELK stack, I learnt the business side of use cases and how they actually impact such E-commerce companies.

Brief Description of working environment, expectations from the company: The working environment was good and I got a chance to work with talented people from different domains. Some teams work on very primitive technologies and I would expect them to work on some new technologies in future.

Name: Aman Varma (2012B3A3481P)

Student Write-up

Short Summary of work done during PS-II: Developed an automation framework to test the functionality of the OLCM component.

Tools used (Development tools - H/w, S/w): Java, TestNg, Rest Assured, JAXB, xml.

Objectives of the project: To test the functionality of the OLCM component.

Outcomes of the project: Thorough testing of the OLCM component. Some defects were identified and issue was raised.

Major Learning Outcomes: Got to learn about automated testing frameworks, xml parsers, marshaller and unmarshaller and how to properly use an IDE.

Brief Description of working environment, expectations from the company: Work culture is pretty good, timings are flexible and colleagues are very helpful.

Name: RAGHAVA KRISHNA REDDY MAMIDIDODDI (2013A7PS035H)

Student Write-up

Short Summary of work done during PS-II: Front end developer, Suggesting best performing products that are in the market and absent with Walmart using few metrics and graphs drawn, also written test cases searching an image (different views) of a product using its UPC.

Tools used (Development tools - H/w, S/w): Angular JS, JavaScript, HTML, CSS, Jasmine, Karma and Gulp.

Objectives of the project: project 1: suggesting best performing products that are in the market and absent with Walmart using few metrics and graphs drawn. Also written test cases. Project 2: searching an image (different views) of a product using its UPC.

Outcomes of the project: Project 1: Finished with production and is in use. Project 2: it is used as a part of another big project where customers can search a product by ingredients, name etc...

Major Learning Outcomes: Current Technologies.

Brief Description of working environment, expectations from the company: Working environment is much friendly than i expected, all the associates are very happy and open for help anytime. But little more work is expected on the whole.

Name: Chaitanya Kummaragunta (2013AAPS094H)

Student Write-up

Short Summary of work done during PS-II: My projects were front end web development. My first project was to create a prototype application implementing browser push notifications. My second

project was to use React.js and Node.js to develop an internal communication tool for Walmart employees.

Tools used (Development tools - H/w, S/w): Eclipse, Tomcat, React, Node and Webpack.

Objectives of the project: Develop company related web tool using Electrode framework.

Outcomes of the project: Successfully developed the first stage of required web tool.

Major Learning Outcomes: JavaScript, web module bundling, Node.js.

Brief Description of working environment, expectations from the company: Very amicable colleagues, flexible timings. Managers take an enthusiastic approach with interns.

Name: MANAN KHASGIWALE (2013A7PS128P)

Student Write-up

Short Summary of work done during PS-II: I have streamlined few flows in the return cycle of the product. I have made a Returns Dashboard which will be used by the team and business leaders to track the irregularities and monitor the ecosystem.

Tools used (Development tools - H/w, S/w): Spring, Maven, Tomcat, Spring MVC, JSP, JSTL, JavaScript and AngularJS.

Objectives of the project: To create a dashboard to have detailed report/analysis of returns.

Outcomes of the project: Created a dashboard with find and search functionality and graphs for visualisation.

Major Learning Outcomes: I got to learn development process and tools.

Brief Description of working environment, expectations from the company: Working at Walmart has been a good experience. The people here are friendly and support you on and off. You get to work on real project and change see the change you are making for the organisation.

Name: PATNAIK ROHAN GOUTAM (2013A7PS102G)

Student Write-up

Short Summary of work done during PS-II: Backend development and automation.

Objectives of the project: Confidential.

Outcomes of the project: Confidential.

Major Learning Outcomes: Industrial practices for development.

Brief Description of working environment, expectations from the company: Very relaxed working environment.Work can be horrible or really good - depends on the team you get.

Name: R SRINATH (2012B5A7560G)

Student Write-up

Short Summary of work done during PS-II: Developed the core micro-services for Walmart's Sourcing Knowledge Platform.

Tools used (Development tools - H/w, S/w): Java, spring, Maven.

Objectives of the project: To build an alpha iteration of phase-2 of the sourcing knowledge platform.

Outcomes of the project: Our basic prototype is ready and can be demonstrated to the business.

Major Learning Outcomes: Java, Software Development, Unit Testing, Web Services.

Brief Description of working environment, expectations from the company: Nice working environment, good perks (free lunch, cab, gym), flexible working hours.

Name: ADITYA BHALLA (2012B5A7546G)

Student Write-up

Short Summary of work done during PS-II: A new service called the Dataset service was built which aimed at retrieving data from datasets and checking for the appropriate authorization. Also, the processing of datasets was rearchitectured replacing the old shell scripts that were being used with properly structured Java code to enhance the maintainability and testing. Data provided by external vendors was landed within Walmart and moved to the appropriate databases for further use.

Tools used (Development tools - H/w, S/w): Java, Spring Boot, Maven, Junit Framework, Spring Framework, Hortonworks Sandbox, Apache Hive and Hadoop.

Objectives of the project: To facilitate data movement between different pairs of sources and destinations and improve processing.

Outcomes of the project: The data movement framework was built so that data could be moved as required.

Major Learning Outcomes: Got insights about Big Data and frameworks required for Big Data processing.

Brief Description of working environment, expectations from the company: The Company is too chilled out. The main pros are that Walmart takes very good care of its employees and interns, and there is not much pressure of work, so you can work at your own pace. The cons are that there is not much learning, the work that I did in the entire internship could have been done in a month. There is almost no guidance. People lack technical expertise and the quite a few departments are working on very old and outdated technology. I felt all my skills will get wasted if I stick around in that company for a few more days. Interview process is tough but can be cleared with good preparation. Take Walmart if you want to totally chill and don't care much about learning and growth.

Name: Vamsee Kotaru (2013A4PS065H)

Student Write-up

Short Summary of work done during PS-II: Worked on various small projects, all of which contribute to optimizing the cost of the Mineral Lube Oil system of Gas turbines.

-Developing a tool (in Excel) for calculating heat transferred from Mineral Lube Oil (MLO) in a Gas turbine system, in cold ambient temperature conditions.

- Implementing a new idea for the MLO system on an in-house 1-D CFD software, Floinhance to analyze its performance and therefore establish its practical feasibility.

-Identify degassing techniques to apply to the MLO system to reduce a parameter affecting the cost of the Lube Oil console

Tools used (Development tools - H/w, S/w): Excel VBA, Flowmaster and Floinhance (In-house tool) for 1D-CFD analysis.

Objectives of the project: Reduce the cost of the Mineral Lube Oil system in Gas turbines.

Outcomes of the project: Development of tools and identifying new methods, which on further research can lead to cost optimization.

Major Learning Outcomes: Deep understanding of the Gas turbine and its auxiliary systems, Understanding P&IDs (Process and Instrumentation Drawing), Excel VBA coding, functioning of the organisation, Reading cost matrices for a project, Setting practical goals, Importance of theory in practical applications.

Brief Description of working environment, expectations from the company: The work environment is relaxed; there is no constant pressure from mentors or managers. Ample time is given to learn new concepts required to complete a given task and you are expected to set realistic goals for the same. The employees are very knowledgeable and always willing to help. Except access to some confidential information, interns can actively participate in group meetings, brainstorming sessions and discussions across various teams and departments.

PS-II Station: Zeotap India Pvt. Ltd, Bangalore

Student

Name: PRATIK (2013A7PS057P)

Student Write-up

Short Summary of work done during PS-II: Implemented the backbone data platform of the company which enriches and makes queryable input telco data from several sources and loads it into one efficient data store which can serve both outside agencies and also other products at Zeotap. Our work involves designing(under the supervision of proficient technical architects) as well as implementation of the entire pipeline using the most apt Big Data technologies like Apache Spark, Apache HBase, Hive, Apache oozie, Amazon Redshift. Etc.

Tools used (Development tools - Apache Spark, Apache HBase, Hive, Apache oozie, IntelliJ, scala, java, and python.

Objectives of the project: To build a high performance and high integrity data ingestion pipeline.

Outcomes of the project: build a high performance and high integrity data ingestion pipeline.

Major Learning Outcomes: Proficiency in Big Data technologies like.

Brief Description of working environment, expectations from the company: Work environment is great. There are no fixed working hours, free lunch and evening snacks and a fully stacked fridge. Team is great and will help you through everything. Interns are taken seriously and even Principal engineers hear patiently what you have to say during design discussions and daily scrum/standup. Small team, so you can shoulder a lot of responsibility. There is no pressure of work as long as you put in efforts and don't slack off. There are monthly parties. Also office events like ice cream evenings where lots of icecream is ordered in the office itself, on Friday evenings.

Name: SHANTANU SHRIVASTAVA (2013A7PS068P)

Student Write-up

Short Summary of work done during PS-II: The work involved the complete design of the data platform for zeotap which will be the backbone of the company. Apart from that we also had to maintain the existing pipeline that is being run in the company. Also got a chance to be a part of the migration of the entire services from one infrastructure to another.

Tools used (Development tools - Apache Spark, Scala, AWS, and Postgres.

Objectives of the project: Re architecture of Data Platform.

Outcomes of the project: Data Platform.

Major Learning Outcomes: Big Data technologies.

Brief Description of working environment, expectations from the company: The working environment was very good. We go to work on all the latest technologies in the big data domain. We also had the freedom to explore any new technologies which we felt could be helpful in our projects. The mentors were very helpful and provided us with excellent guidance throughout the internship. New ideas were encouraged and even we as interns regularly took part in detailed design discussions with our mentors.

Name: DIPESH PATEL (2015H103079P)

Student Write-up

Short Summary of work done during PS-II: Data engineering, Implementation of Web services.

Tools used (Development tools - Apache Spark, Apache Hive, Java, and Scala.

Objectives of the project: Data pipeline implementation and deployment.

Outcomes of the project: Central Data pipeline to process entire Data of company.

Major Learning Outcomes: Apache Spark, Apache Hive, Implementation patterns.

Brief Description of working environment, expectations from the company: Working environment is good and very friendly. Company met all expectations.

Domain: Biological Science

PS-II Station: Beckman Coulter (formerly ReaMetrix India P Ltd), Bangalore

Student

Name: Shreya Kumar (2012B1A3586H)

Student Write-up

Short Summary of work done during PS-II: I was involved in characterizing a diagnostic kit for the company. The kit is a flow cytometry based reagent used to detect B27 expression in blood. My project involved various experiments done on 5 different flow cytometry. I learnt the nuances of product development and quality control.

Tools used (Development tools - H/w, S/w): Flow cytometes.

Objectives of the project: To characterize the Dura Clone B27 reagent and qualify it for use on different BD and Beckman Coulter flow cytometry.

Outcomes of the project: At the end of all characterization and verification studies, the product will be qualified for use on 5 different flow cytometes.

Major Learning Outcomes: Flow cytometry, handling of biological reagents and blood, quality control, manufacturing processes.

Brief Description of working environment, expectations from the company: Work environment is extremely chilled out but at the same time very productive. Lots of passionate Bitsians work at the company making it a great place to learn. Though it is a multinational, the small size of the workforce makes it a tight-knit group where everyone is willing to help each other.

Name: N Tanmaye (2012B1AA750H)

Student Write-up

Short Summary of work done during PS-II: Learnt about multi-colour flow cytometry assays. Was involved in development of multiples assays. Gained knowledge of various stages involved in product development. Learnt a lot about immunology. Gained insight on various applications of flow cytometry. Also learnt how flow cytometers can be used for identifying different sub populations of cells and detect diseases.

Tools used (Development tools - H/w, S/w): Flow cytometry, Kaluza.

Objectives of the project: To understand the development of multi-color flow cytometry assays for immune monitoring, activation and function. To perform stability studies and data analysis which would be relevant to product development.

Outcomes of the project: Contribution to different stages involved in development of various products. Performed stability studies and data analysis for multiple multi-colour flow cytometry assays.

Major Learning Outcomes: Learnt a lot about flow cytometry and its various applications in the field of biological sciences. Gained insight on product development. Enhanced knowledge of immunology multifold.

Brief Description of working environment, expectations from the company: Amazing work culture. Extremely knowledgeable as well as supportive mentors. Learnt a lot. Perfect place to learn as well as enjoy work.

PS-II Station: belong.co, Bangalore

Faculty

Name: Uma Maheswari Natarajan

Comments: Expectations from industry: At Belong.Co, other than the basic CS knowledge, students should have good understanding on Statistics, analytics and interested to work in research areas.

Student

Name: Devam Jhanwar (2012B1A4803P)

Student Write-up

Short Summary of work done during PS-II: I was allotted 3-4 projects during my internship at Belong, and all the projects were related to market research.

Objectives of the project: To conduct market research on 3-4 things. These have been explained in detail in the report.

Outcomes of the project: Insights about the competitors, List of people to outreach for the publicity of a major event, etc.

Major Learning Outcomes: 1. I learnt how a market research is conducted 2. I learnt a great deal about how a startup is run and scaled.

Brief Description of working environment, expectations from the company: Really interesting people to learn and grow with. When you come into the company, there is ego dissolution where you realize you don't know much and there is so much to be learnt. It is the sort of atmosphere that tries to bring the best out of each individual. One of the core company values is, "Be better than yesterday" and people try to inculcate it in their lives, work and private.

Name: Harsh Varshney (2012B5A3576P)

Student Write-up

Short Summary of work done during PS-II: I am in the analytics dept. I have been given the responsibility of handling the database and serve requests as and when. I was given the task of automation of things so that it will help the team in coming times. Also I managed the support for the team for some while.

Tools used (Development tools - H/w, S/w): Qubole, SQL, Python language.

Objectives of the project: Handling of database.

Outcomes of the project: Managed the database.

Major Learning Outcomes: Database management, python automation, machine learning stuff.

Brief Description of working environment, expectations from the company: Super awesome.

Name: Shubhankar Srivastava (2013A7PS095P)

Student Write-up

Short Summary of work done during PS-II: My broad area of work revolved around analytics for our SaaS product, developing visualization tools and deriving insights of product usage over time. Majority of my smaller projects revolved around testing hypotheses via data analysis, so that data-driven decisions could be taken for the Product or Design team. I also developed a slackbot for internal purposes, which gave organization-level metrics within slack itself -- thus moving towards data democratization and more data-driven decisions.

Tools used (Development tools - H/w, S/w): R, Python and Postgresql.

Objectives of the project: - Development of a Shiny application for visualization purposes - Building a User Journey model so as to derive actionable insights from their usage patterns - Development of a Slackbot for data extraction purposes within the org.

Outcomes of the project: - The shiny app is currently being tested for data validation purposes, bottlenecked for the need of a better data pipeline. - Slackbot deployed and demo-ed.

Major Learning Outcomes: I improved a lot on my SQL skillsets, the database schema across various platforms was a challenge to master. More fluent in my R and Python overall. More than technical skills, i learnt a lot about understanding product usage, how B2B/SaaS startups should be run and met a whole lot of smart people!

Brief Description of working environment, expectations from the company: I feel the working environment in Belong is far superior to a lot of other startups or corporate. The work ethic of most people is worth emulating, especially the founders. The organization follows a core set of values, which is reinforced in a lot of product-based decisions. Overall, an intense workplace backed by amazing culture :)

PS-II Station: Centre for Cellular and Molecular Platforms (C-CAMP), Bangalore

Student

Name: Vishvesh Anikhindi (2015H129005G)

Student Write-up

Short Summary of work done during PS-II: I worked on a new and independent project. The project was given to me by Dr. Anandi K. who is PI. But whole work starting from literature survey designing the protocol and actual work was done by me. The project I worked on includes subject like microbiology, molecular biology, recombinant DNA technology, genetic engineering, etc. My work included design of vector and insert. Also design of cloning protocols and extensive rounds of cloning. I also assisted in ongoing project in the lab with doing ELISA. Initially i was also introduced to protein purification using FPLC AKTA purifier.

Tools used (Development tools - H/w, S/w): In softwares, I used, Snap Gene, Genome Compiler, Benching, etc to design the cloning vectors. I used all tools required for cloning like PCR, Restriction digestion, ligation, transformation, etc.

Objectives of the project: The main aim was to compare promoter strength using EGFP expression pattern of two different variants of promoter. For this there were 3 objectives: 1. Design of vector and insert and design of cloning protocols. 2. Cloning of EGFP in the vector backbone 3. Introduction regulatory sequences. 4. EGFP analysis.

Outcomes of the project: From the above objectives, first two objectives i.e designing and cloning of egfp were fulfilled.

Major Learning Outcomes: Molecular cloning techniques.

Brief Description of working environment, expectations from the company: Working environment is really very nice. The infrastructure, instruments, etc are really of advanced level. Appropriate expectations were there from company that should be made from an intern. It was a good learning experience.

PS-II Station: Centre for DNA Fingerprinting and Diagnostics, Hyderabad

Student

Name: Ashwini Shrikhande (2015H129003G)

Student Write-up

Short Summary of work done during PS-II: My project at CDFD involved cloning fragments of MLL protein into vector with GFP and study the localization of each fragment. I got excellent opportunity to learn and understand troubleshooting and all the aspects involved in cloning. Before joining, I had only read about some techniques like immunofluorescence, confocal imaging etc. PS at CDFD helped I to understand what the different factors are involved in working of any research laboratory.

Objectives of the project: To Map the localization of MLL fragments into mammalian cells.

Outcomes of the project: I was able to clone and map MLL-C fragments.

Major Learning Outcomes: I learnt cut-paste cloning, transfection of mammalian cells, cell fixation, immunofluorescence etc.

Brief Description of working environment, expectations from the company: Lab environment is conducive for learning with helpful and friendly people.

PS-II Station: CIPLA Ltd, Goa

Student

Name: Prajakta Kolambkar (2015H129001G)

Student Write-up

Short Summary of work done during PS-II: This study was carried out to prepare equipment tracker containing list of equipment and associated qualification report details with protocol number, make and model details, location of equipment, calibration, validation and preventive maintenance details for easy tracking of equipment details, due dates and to find gaps in the system.Another part of this study was to prepare failure mode assessment list. This list was prepared to collect information such as instrumental and operating range of equipment, purpose of the equipment, different faults that can occur in equipment and its impact on product quality.

Objectives of the project: To prepare equipment tracker and failure mode assessment list.

Outcomes of the project: The outcome of this study is formation of master list of equipment to track all equipment details and list of effect of failure of equipment on product quality.

Major Learning Outcomes: Different documentations and regulatory requirements in Biopharma Company.

Brief Description of working environment, expectations from the company: Working environment is good.

Name: Rishabh Malhotra (2015H129005H)

Student Write-up

Short Summary of work done during PS-II: Trend lining of data and HPLC.

Objectives of the project: Generate trend line of the data generated by the company.

Outcomes of the project: Trend line generated successfully using MS Excel.

Major Learning Outcomes: Efficient use of MS Excel.

Brief Description of working environment, expectations from the company: Good work environment, nice people, company ran out of funds.

Name: Harikrishnan M (2015H129004G)

Student Write-up

Short Summary of work done during PS-II: The project given was focused on generating a list of chemicals used in QC section along with creating a table which would map all the experiments to the corresponding chemical used. Also, there was scanning of company stability files for their archival.

Tools used (Development tools - H/w, S/w): 1. Microsoft Excel 2. Browsing Internet 3. Microsoft Word 4. Scanning tool.

Objectives of the project: 1. Generate a list of testing reagents used (both made and purchased) in testing, source of raw materials, storage condition, expiration dating assigned and the verification/validated state of these reagents 2.List of all the completed stability studies and their expected date of completion. The stability reports can be scanned and archived.

Outcomes of the project: 1. A completed map of all the experiments to the corresponding chemicals used. 2. Archival of stability files. 3. SOP for expiry date assigning and retesting procedure.

Major Learning Outcomes: 1. Team work. 2. Work under pressure to finish within the required deadline. 3. Information about different tests performed in QC section 4. Gained knowledge of different duties of QA section.

Brief Description of working environment, expectations from the company: About working environment: 1. The employees were supportive.2. Work timings were fine. Expectation: 1. To generate an SOP for expiry date assigning and retesting procedure. 2. To generate a map of all tests to reagents used.

Name: Sriharsha Challa (2012B1A2671P)

Student Write-up

Short Summary of work done during PS-II: MS Excel VBA programming for analytics automation. Research for better documentation and standard practice under expert consultation.

Tools used (Development tools - H/w, S/w): Excel VBA.

Objectives of the project: Harmonization of documentation.

Outcomes of the project: Time efficiency of personnel improved.

Major Learning Outcomes: VBA macro programming.

Brief Description of working environment, expectations from the company: Sad work environment.

Highly biased. Company shut down now.

PS-II Station: Decision Resources Group, Bangalore

Student

Name: Himanshu Agrawal (2015H108190P)

Student Write-up

Short Summary of work done during PS-II: Developed a draft on the present Health Insurance scenario in India as a part of the position paper in collaboration with Adverted. Conducted primary interviews with the key opinion leaders and industry experts to gain useful insights about the topic. Along with that, performed sufficient secondary research to support the data submitted. Compiled all the information and have recommended an ideal model that should be implemented to provide universal health insurance coverage in India.

Tools used (Development tools - H/w, S/w): Secondary research.

Objectives of the project: To develop an Ideal Health Insurance model providing universal health insurance coverage to each strata of population in India.

Outcomes of the project: Research about present Health Insurance scenario in India and the opportunities and challenges for the development of the same.

Major Learning Outcomes: 1) Present state of insurance framework in India 2) Challenges for healthcare insurance in India 3) Opportunities for universal health coverage 4) Successful insurance models in countries with similar demographics and economy 5) Plan for an ideal insurance model.

Brief Description of working environment, expectations from the company: Primary research needs a thorough understanding of the market and the therapy segment. Exposure to primary research is something which gives an overall insight of the industry. Transcription of calls with key opinion leaders and industry experts helps to learn about the industry from their perspective. Secondary research is the major work done and it needs a lot of search to get the required information. In DRG the work of the Research Associates is as such well-designed and immense and it is made sure that they get sufficient exposure to the work culture. The projects that I worked on made me gain lots of knowledge about medical device industry. As the entire training itself is fully structured, I do not want to give any suggestions for the future. The company made me work on live projects only after providing training

assignments, which finally helped in avoiding mistakes in the final live project. I would recommend this company for internship, as they train interns well which would be helpful in their future works. Overall it was a great experience working with the team. DRG is one of the best company involved in the field of market research and is progressing at a tremendous pace. I can definitely say that DRG is one of the forerunners in the World for the specialized work it offers.

PS-II Station: Dr. Reddys Laboratories, Hyderabad

Student

Name: Payal Patel (2015H147200P)

Student Write-up

Short Summary of work done during PS-II: We are dealing with synthesis of a fragment which will be a part of an anticancer molecule. Learning how to come up with the synthetic scheme, optimize the reaction for better yield and scalability in API R and D division.

Objectives of the project: To develop a synthetic procedure for the given fragment which gives better yield and involved less risks with the chemicals and can be scaled up easily.

Outcomes of the project: The synthetic scheme for the preparation of fragment has been finalized and is on the verge of scale up. This is used further for synthesizing an active Pharmaceutical Ingredient which will be developed into formulation later.

Major Learning Outcomes: Acquaintance with the actual chemistry lab in an R and D centre. Handling of various harmful chemicals. Learning about various reagents, their methods and mechanisms and handling which was used during the course of the project. Interpretation of NMR, IR and mass Spectra. Acquaintance with column and flash chromatography.

Brief Description of working environment, expectations from the company: Working environment is good here not much stress on the employees and also interns are allowed to perform various reactions and learn about new techniques.

Name: Vaishnavi Nimbalkar (2015H146216P)

Student Write-up

Short Summary of work done during PS-II: Performed lab scale trials for the production of a solid oral dosage form by using various equipments and apparatus. The activities done include dispensing of excipients from the day store, dispensing of API from the warehouse, production of lab scale batches of

tablets which involve various unit processes, characterization of the different batches using sophisticated techniques, etc.

Tools used (Development tools - H/w, S/w): Fluidised bed dryer, rapid mixer granulator, Compression machine, NeoCota coating machine, software for Design of Experiments (DOE).

Objectives of the project: To develop a generic and economical version of the innovator product of pro-kinetic drug used in the treatment of functional dyspepsia.

Outcomes of the project: The outcome of the project was to obtain a bioequivalence to that of the innovator product. Many different batches were prepared which showed a somewhat nearby equivalent with the innovator. Further trials will be undertaken to have a complete matching profile with the innovator.

Major Learning Outcomes: Learned handling of different equipments and apparatus, acquaintance with the stages involved in the development of a product, etc

Brief Description of working environment, expectations from the company: Working environment is very friendly with an enjoyable learning experience, exposure to different activities carried out in product development.

Name: Jonnalagadda Lakshmana Rao (2015H147198P)

Student Write-up

Short Summary of work done during PS-II: Furan is a planar 5-membered aromatic heterocyclic ring with 4 carbons and 1 oxygen atom and in ring “O” is present in 1stposition. The furan ring is a constituent of several important API’s, natural products. Furan and its derivatives have occupied a distinctive place in chemistry. The incorporation of furan nucleus is a prime synthetic strategy in drug discovery. The properties of (physicochemical and therapeutic) of the furan related molecules encouraged chemists to synthesize a large number of compounds. This project aims to discuss the work related to process optimization of one furan derivative which is one of the fragments of anticancer drug. The process optimization involved using various reagents, catalysts at different temperatures and the

final product structure is predicting with the help of IR, Mass spectroscopy and NMR (1H, 13C).The furan based pharmaceuticals will be produced on large scale by modern drug discovery companies by different drug discovery processes pharmaceuticals are becoming very important class of therapeutic agents and are likely to be replace many existing organic based pharmaceutical in the very near future.

Objectives of the project: Current Healthcare industries facing challenges likes, On demand manufacturing capabilities? New analytical capabilities Continuous manufacturing technology Real time access to production data Process optimization is a part in initial drug development to face these challenges up to some part to meet needs of the industries needs in terms of profit and customers satisfaction in terms of drug usage. This report discussing about process optimization of fragment precursor synthesis which is useful in the synthesis of anticancer drug (DRL confidential compound).

Outcomes of the project: Successfully optimized the process with good yield in less time in Green Chemistry way.

Major Learning Outcomes: 1.Handling of some hazardous Chemicals and couple of reactions 2. Purification Techniques (Flash Chromatography and High Performance Liquid Chromatography).

Brief Description of working environment, expectations from the company: It was a great learning experience of six month with Dr. Reddy's Laboratories (DRL). I was assigned to API R&D of the company. Apart from helping us in understanding the application of core domain knowledge in the various projects, I also learnt about the pharma industry etiquette's and culture that needs to be adapted. I was working with some of the company's most dedicated and hardworking employees who were really supportive. Different training's helped me in understanding the whole objective of the project from team and was able to deliver all the results of project on proper time.The facilities provided by the companies were really good. The project that I worked on dealt with updating the DRL's API R&D with the help of some literature research from few paid and unpaid databases of the company.This project was done to fulfill the Company need. The elective subjects that I took like Pharmaceutical Chemistry, Intellectual Property rights (IPR) and Quality Assurance and regulatory affairs (QARA) helped me in understanding the aim of the projects that were assigned to me. The major take back from my internship program is that it widened my knowledge base and helped me acquire knowledge on my core stream, Regulatory Affairs and patent also.I also learnt a lot from the employees under whom I was working. Working with Dr.Reddy's Laboratories will definitely help me in planning my career more

pragmatically. During this time span, I worked on a project that helped me to increase my efficiency and understanding. I would say, PS experience is something that every student should opt for as it will add on to their resume and will help them grow professionally.

Name: Rahulkumar Nimat (2015H146209P)

Student Write-up

Short Summary of work done during PS-II: My work gives an account of development of generic inject able dosage form of drugs containing DRL1 and DRL2. The DRL1 and DRL2 are two anticancer drugs which are used for two different type of cancer. DRL1 is used in treatment of non-small cell lung cancer and DRL2 is used in treatment of stomach and pancreatic cancer. Most of the pharmaceutical products are now being dispensed in the inject able form as it has several advantages over the conventional dosage forms i.e. Solid oral dosage forms. There are many challenges when we are making a 505b2 and 505j parenteral formulation. The challenges while making a doppelganger of the innovator product are biocompatibility of the excipients with the drug, sterility, pyrogen content, pH, isotonicity and also prevent degradation of drug. This all has to be taken into account while formulating a pharmaceutical dosage form. Our aim is to successfully formulate inject able dosage form i.e. Lyophilized formulation as well as the liquid injections so as to match the innovator product. This generic drug product is to be made for US population. The generic cheap version will definitely be same as innovator in every term and will be launched into market after its filings takes place.

Tools used (Development tools - H/w, S/w): High Performance Liquid Chromatography, Gas Chromatography, Lyophilization, osmometer, Oxybaby (Head Space analyser), DO meter (Dissolved oxygen measurement).

Objectives of the project: To formulate two formulations containing two anticancer drugs DRL1 and DRL2.

Outcomes of the project: The laboratory trials for the formulation with different excipients and different solvents were prepared analysed and then optimized**.**

Major Learning Outcomes: Learned about functioning of the Freeze-Dryer in Detail. 505j and 505b2 filings differences and details.

Brief Description of working environment, expectations from the company: The work environment is knowledge enriching and enhancing. The people here are very co-operative and respond to questions and queries. I think the Management of the company and the attitude of company towards the student is very weak. They have failed to deliver the stipend within the stipulated period of time.

PS-II Station: Halliburton Technologies, Pune

Student

Name: Anamika Sonkar (2015H101031P)

Student Write-up

Short Summary of work done during PS-II: PS-II is a wonderful opportunity for the passing out students to actually be in the field and experience the corporate life.My five- and a half month internship at Halliburton Technology Centre, Pune has been a great learning experience. The Halliburton Company, an American multinational corporation, is one of the world's largest oil field service companies and it has its Technology centre in Pune. It is totally different at the PS-II organizations in terms of the work load, the kind of exposure outside the books and particularly at this firm I find myself really lucky to be a part of all the real time projects carried out by the organization. I learnt in great depth about how oil and gas industry works and what it is like to be working in a research type project in Production Enhancement Team. In PS II,the requirement of different tests under production enhancement technology i.e. fracturing, acidizing and sand control used to come from their customers and they have to perform testing as well as analysis of result and recommended techniques. Iwas working in the lab division of the company under Production Enhancement Tech Services. The scope of the work assigned lied in the understanding and analysis of core flooding/core flow in oil and gas industry and evaluation of effect of different treatment fluids on core samples in core flow. I've also performed tests under Sand Control, Hydraulic fracturing team and Acidizing team which were very helpful to increase my knowledge about upstream oil industry.

Tools used (Development tools - H/w, S/w): The equipment used is Core Flow (H/W), permeameter, porosimeter, chandler, viscometer, Rotating Disk Apparatus, (H/W), core view(s/w).

Objectives of the project: The purpose of the system above is to recreate the conditions from which the core was removed, and then to pump fluids through the rock core to determine permeability and depending upon the permeability further analysis and treatment is recommended and evaluation and effect of different treatment fluids on core sample is done.

Outcomes of the project: Core Flooding is a common test to determine rock permeability, and how well various fluids, including oil, will flow through it and thereby, increasing production of oil.

Major Learning Outcomes: It gave me opportunity to experience many instruments, and new techniques

Brief Description of working environment, expectations from the company: I had the chance to interact with professionals having several years of experience, and get an insight into their approach towards tackling problems. Working with efficiency even under pressure is something I could witness in Halliburton. Despite all the hard deadlines, my team always lent a helping hand when I was stuck in a problem and patiently answered the questions I put forth to them.

Name: Akashdeep Singh Jamwal (2015H101035P)

Student Write-up

Short Summary of work done during PS-II: The work that I did at HTC, Pune mainly deals with drilling fluids or you can say completion fluids to be more specific. As the people familiar with the process of oil-well drilling would know, drilling fluids are pumped throughout the well bore while the drilling process, forming a layer of filter cake on the formation which is needed to be removed before the production starts. My work deals with formulation of such fluids, called the breaker fluids that are required to remove the cake which is deposited. The work required testing of the breaker fluid and study of its interaction with the filter cake and/or its components. Testing of various such systems at ambient conditions as well as that at high temperature and high pressure was performed to collect enough data so as to reach a proper conclusion.

Objectives of the project: To formulate and evaluate breaker fluid systems required for removal of filter cake that is formed on the well bore during drilling.

Outcomes of the project: Various breaker fluids were optimize based on the temperature and carrier system requirements. Tests were performed clearly showing complete cleanup of filter cake using the breakers.

Major Learning Outcomes: I have learnt a lot about Oil and Gas industry, more precisely about the processes involved in the oil-well drilling and about the various applications of drilling fluids.

Brief Description of working environment, expectations from the company: The environment of HTC, Pune is full of motivation for any newcomer. There is an absolute professional work environment full of highly competent and respectful group of people working together. Everyone keeps things in perspective, have fun and laugh at times with main focus on the work to be done.

PS-II Station: HERON A, Parexel Company, Chandigarh

Student

Name: Kovida (2015H108194P)

Student Write-up

Short Summary of work done during PS-II: The work includes development of systematic reviews and analysis of evidence. It is not core analytics but analysis is a part of systematic review development which includes study of research objectives, collection of data, appraisal of the evidence followed by analysis and summarization of results. The work is in the realm of secondary research with a focus on selecting clinical trials that meet the research objective, selection and extraction of evidence based on different guideline criteria, analysis and summarization. The work would involve exposure to different therapeutic and disease areas. Besides clinical focus, reviews focused on economic, epidemiology and compliance parameters are also conducted.

Objectives of the project: The aim of the project is to perform literature review to create an evidence base for studying the immunotherapy landscape in oncology.

Outcomes of the project: no as such outcomes are generated but it provides some evidence for further study in oncology.

Major Learning Outcomes: Understanding of Literature review/systematic review search and synthesis, biostatistics, clinical trials/clinical data, medical terminology, writing.

Brief Description of working environment, expectations from the company: Pleasant working environments all are very friendly and helpful, feasible timings and gives company gives opportunity to put forward our ideas, there will be all around development.

Name: Gaurav Jasraj Chandak (2015H146213P)

Student Write-up

Short Summary of work done during PS-II: Analyzing and reviewing scientific evidence emerging from Secondary research and clinical efficacy and safety studies so as to develop evidence based reports to support reimbursement and regulatory requirements.

Objectives of the project: Market access challenges of Indian Pharma companies.

Outcomes of the project: Current Healthcare scenario status in India and what are the drawbacks how it can be improved and what measures are being taken and are needed to take so as to create an Ideal healthcare system.

Major Learning Outcomes: Actual Pharma scenario in India, and how consultancy companies can help to overcome problems related to health care system.

Brief Description of working environment, expectations from the company: Friendly environment for working. Flexible timing, as an Intern pay is also good. They will give you every possible task to do, so good exposure to work. Nobody judges your intellect when you ask doubts.

Name: Shravya Bhat (2015H146217P)

Student Write-up

Short Summary of work done during PS-II: Literature review of the project allotted to me. More over worked on the live projects of the company during the entire span of PS.

Objectives of the project: To conduct a literature review on oncology drug rejections.

Outcomes of the project: The trends of cancer drugs being rejected by regulatory bodies.

Major Learning Outcomes: Various strategies, steps to conduct the reviews. Literature surveys and deriving the trend of interest.

Brief Description of working environment, expectations from the company: Working environment is good and flexible. There is much to learn.

Name: Sanskruti (2015H147201P)

Student Write-up

Short Summary of work done during PS-II: Profile- HEOR (health economics outcome research). Systematic review. Worked on different live projects.

Objectives of the project: To study the Unmet clinical needs in area of pain management.

Outcomes of the project: Patients are not assessed or diagnosed properly, there is a need for individualized treatment for neuropathic pain.

Major Learning Outcomes: No major outcomes.

Brief Description of working environment, expectations from the company: Working environment is good and people are very cooperative.

PS-II Station: Hindalco innovation center, Taloja

Student

Name: Akhil S Nair (2015H148051H)

Student Write-up

Short Summary of work done during PS-II: Thermal Modeling of Aluminium Rolling Ingots in a Preheat Furnace Developed a numerical heat transfer model for predicting the temperature distribution in an aluminium ingot during the preheating process. Explicit Finite Difference model with convective heat transfer from furnace air and conduction within the ingot considered. Prediction of Heat Flux energy transferred through the preheating cycle for improvement in cycle efficiency. Model programmed in Python. Calibration of furnace Heat Transfer Coefficients and validation of calibrated model done using thermocouple surveys of ingot.

Tools used (Development tools - H/w, S/w): Python, MS Excel, Enguage software.

Objectives of the project: To develop a mathematical model to obtain the Temperatures at the discrete locations with the Aluminium rolling Ingot during preheating inside a preheat furnace. Calibration of furnace heat transfer coefficients and validation of calibrated model using thermocouple surveys of ingot.

Outcomes of the project: Explicit Finite difference Heat transfer model was developed.The model was able to predict the temperatures within the ingot during the preheating cycle. Suitable calibration factor for the heat transfer coefficients was obtained and validated using the thermocouple surveys of ingot.

Major Learning Outcomes: Mathematical modeling (2D & 3D), Discretization of the governing equations, Python programming, Ms Excel.

Details of papers/patents: 1) Sobrinho et al, “Analysis of aluminum plates under heating in electrical and natural gas furnaces”, Journal of Heat and Mass Transfer Elsevier, 2000, pp.975-987.2) CJ Davenport and A Darby, “ Investigation and modeling of energy consumption during ingot preheating at Oswego”, Innoval Report, 2003 3) CJ Davenport, “Improvements to Ingot Pre-heating– a Modeling Approach”, Innoval Technology, ICJ07-008.4) Rene Prieler, Bernhard Mayr,” Prediction of the heating characteristic

of billets in a walking hearth type reheating furnace using CFD" Journal of Heat and Mass Transfer Elsevier, 2015,pp.675-688.

Brief Description of working environment, expectations from the company: It was a great experience socializing in a professional atmosphere. Overall, it has been a great learning experience at HINDALCO, not only in terms of knowledge about the subjects but also the professional behavior.

PS-II Station: IMS Health, Bangalore

Student

Name: Saba Bano (2015H129007H)

Student Write-up

Short Summary of work done during PS-II: I was given an internal project that involved searching for the best competitive research tool available online, which is technically advanced as well as cost effective. I also had to look for latest software and platforms being used by the competitors of the company. I was also asked to support my team mates in various live projects. I even attended various meeting, to learn about MIDAS data, detail profiling, Biosimilars and ISO 270013.

Objectives of the project: To identify online web crawler to gain productivity in data collection process from open sources.

Outcomes of the project: Switching to the web crawler that was recommended, for data collection.

Major Learning Outcomes: About market research and the role of a competitive intelligence professional in an organization, work culture in the corporate sector, team work, efficient working and keeping oneself updated with the current market scenario.

Brief Description of working environment, expectations from the company: QuintliesIMS GDC in Bangalore offers a very flexible working hour for their employees, and also encourages them to opt for work-for-home. Everyone is respectful towards each other and focused towards their task at hand. There are frequent game shows and quiz taking place, which is helpful for socializing with each other.

Name: Pratiksha Shetty (2015H108189P)

Student Write-up

Short Summary of work done during PS-II: The main objectives of the project to identify the barriers crossed by the hypercholesterolemia patients were identified and suggestions on that basis were made. The Share of Voice (SOV) for station intolerance was obtained from the social media platforms, the

patients who are under station treatment their comments and sentiments were captured, the insights obtained from them were provided to the clients. Thus, Social Media Analytics helps the clients in understanding the needs of their customers as well as lets the client know where their product or service stands in the market.

Objectives of the project: Social Listening Report on Hypercholesterolemia.

Outcomes of the project: Generated Insights from social media platforms to answer the Business Questions of clients.

Major Learning Outcomes: Data Extraction, Analysis, Insight generations and using data crawler.

Brief Description of working environment, expectations from the company: The work environment is really good, best part is that they involve us in live projects and had a great opportunity to attend client calls.

Name: Mallavaram Sneha (2015H146205P)

Student Write-up

Short Summary of work done during PS-II: Ranking of pharma companies on the basis of their social media presence on platforms such as twitter Facebook instagram pintrest and YouTube.

Tools used (Development tools - H/w, S/w): Radian6 crimson hexagon.

Objectives of the project: To rank the pharma companies based on the social media presence.

Outcomes of the project: Top pharma companies were ranked.

Major Learning Outcomes: Hands on various tools and presentation skills.

Brief Description of working environment, expectations from the company: The environment is friendly and lots to learn from the training sessions and from collegues.

Name: Priyanka Lonandkar (2015H108193P)

Student Write-up

Short Summary of work done during PS-II: Worked on a value add project for the company i.e. an offering on Brand Equity measurement for pharmaceutical companies. Did in-depth secondary research about brand and branding in pharmaceutical industry and the traditional brand equity models present in the market. Developed an innovative brand equity model with KPIs, attributes and parameters specific to the pharmaceutical industry.

Objectives of the project: To develop a brand equity model to measure a brand's equity for the pharmaceutical industry.

Outcomes of the project: An innovative offering for the company to offer to its pharmaceutical clients.

Major Learning Outcomes: How to build a proposal or an offering for the organization from start to end. Currently working on a whitepaper for the same project.

Brief Description of working environment, expectations from the company: The working environment offered by the company is very friendly and good.

Name: Saumya Singh (2015H129002P)

Student Write-up

Short Summary of work done during PS-II: Explored social media handles of pharma companies on platforms such as Twitter, Facebook, etc, developed framework to assess social media presence of companies using predetermined key performance indicators (KPIs), assigned scores to companies and created a ranked list of pharma companies on the basis of their social media presence.

Tools used (Development tools - H/w, S/w): Radian6, Crimson Hexagon, Microsoft Office tools.

Objectives of the project: To create a ranked list of pharma companies on the basis of their social media presence, and establish their patient-centricity.

Outcomes of the project: A ranked list of pharma companies on the basis of their social media presence, Social media platform specific critical success factors for pharma companies.

Major Learning Outcomes: An in-depth knowledge of the analytics field, refinement of PowerPoint and Excel skills, experience in web crawler tools such as Radian6 and Crimson Hexagon.

Brief Description of working environment, expectations from the company: The working environment was conducive to growth and learning. The managers guided us through every step of the project, while, the team was very approachable and always ready to lend a helping hand. All in all, a very good PS station.

PS-II Station: IMS Health, Gurgaon

Student

Name: Pavithra R (2015H129004H)

Student Write-up

Short Summary of work done during PS-II: Secondary desk research, Excel data collection and power-point slide creation and edition.

Tools used (Development tools - H/w, S/w): Excel and power point.

Objectives of the project: To learn about the patents and their drug exclusivities and see their impact on life cycle management (LCM) of drugs.

Outcomes of the project: Overview of different LCM strategies adopted by different drug companies for the success of their products at the market.

Major Learning Outcomes: Excel, Power-point, Secondary desk research.

Brief Description of working environment, expectations from the company: Good working environment with helpful people and good guidance.

Name: Diksha Mishra (2015H146214P)

Student Write-up

Short Summary of work done during PS-II: Segmentation and targeting.

Tools used (Development tools - H/w, S/w): R software.

Objectives of the project: To segment the physician on the basis of potential i.e. No of patients prescribed by the physicians.

Outcomes of the project: Makes the marketing cost effective.

Major Learning Outcomes: R, statistical model.

Brief Description of working environment, expectations from the company: Working culture is nice. One s supposed to learn by himself. Not all mentors are helpful enough.

Name: TN Mahesh (2015H146218P)

Student Write-up

Short Summary of work done during PS-II: Productised market assessment Key Performance Indicators for Pharmaceutical industry. Major focus is to minimize the work time by targeting specific indicator for the market assessment by which minimize time maximize the productivity. Along with mentor project involved in ongoing projects like market assessment for specific product for mentioned indication in a particular space. Involved in Key Opinion Leaders (KOL) mapping and profiling, sales data updating project and small projects helping in building ppt.

Tools used (Development tools - H/w, S/w): Open google search, MS-Excel, Word, PPT, Think cell.

Objectives of the project: creating a dashboard which helps in keep all the completed projects related to market assessment at one place and helps to minimize time in next time doing assessment for specified space.

Outcomes of the project: Identified KPIs and dashboard will minimize the work and helps to get specific results for required space.

Major Learning Outcomes: Learnt the basic secondary searching method and tracking the KPIs creating dashboard.

Brief Description of working environment, expectations from the company: It was good working environment, adjustable timings and employs are supportive in nature.

Name: Vismaya Raje (2015H146215P)

Student Write-up

Short Summary of work done during PS-II: Handled mainly 2 projects, one of a database management and the other of the Pipeline analysis.

Tools used (Development tools - H/w, S/w): Microsoft Excel, MIDAS

Objectives of the project: Development and maintenance of a Database

Outcomes of the project: Competitive Intelligence, HEOR, Pipeline analysis

Major Learning Outcomes: Competitive landscaping, primary and secondary Research, Pipeline analysis

Brief Description of working environment, expectations from the company: The work culture is very good, people are friendly and of helping nature.

Name: Samir Ahmad (2012B1A8631G)

Student Write-up

Short Summary of work done during PS-II: Mostly oncology related projects. Dealing with landscaping of cancer and pipelines. Also referencing if research papers.

Tools used (Development tools - H/w, S/w): Excel, R.

Objectives of the project: Marketing of cancer drugs.

Outcomes of the project: Targeted work acquisition of large pharma companies.

Major Learning Outcomes: Cancer drug trials understanding.

Brief Description of working environment, expectations from the company: Great environment. Affable and helpful. Expects work to be done on time and with accuracy but would assist in every way possible.

Name: Sahil Goyal (2015H146208P)

Student Write-up

Short Summary of work done during PS-II: Work was basically to do Secondary research using publicly available information and some particular websites.Different projects were done related to IDN (Integrated delivery networks), KOLs (Key Opinion Leaders) etc.. Mentor ship project allotted to me was Alternative Payment models used in US healthcare system.All work which I did was based on Extensive desk research which in simple language can be called as 'Google Search'. This is all about team "Business and Strategic Insights".

Tools used (Development tools - H/w, S/w): No new technical tools were used.Just Internet surfing.

Objectives of the project: To learn about Integrated Delivery Networks and Alternative Payment Models

Outcomes of the project: To provide team with a repository on Alternative payment Models to look upon in Future for reference.

Major Learning Outcomes: Frankly speaking, I dint learn anything NEW being in "Business and strategic Insights Team". All it was just how to do research on contents provided and follow the reporting manager. Though 5 Months of experience of Google Search added to my resume.

Brief Description of working environment, expectations from the company: 1.Timings: Completely flexible, Just spend min 8hrs in the company, definitely more than that if you want to. 2. Environment and infrastructure: People are good and sounds qualitative too, Recreational Activities happen here, Foosball table is there to play etc 3.Work Culture: The team I worked in is a bit formal in nature, lesser interaction but still a team I can say. They don't give interns much responsibilities, so it's LITE.

Name: Anirudh Sharma (2013A1PS567P)

Student Write-up

Short Summary of work done during PS-II: I was engaged in data analysis in primarily healthcare sector. The work required in-depth knowledge of many softwares like SAS and R language.

Tools used (Development tools - H/w, S/w): R, SAS.

Objectives of the project: Cost effect analysis.

Outcomes of the project: Creation of a successful working model for the European region.

Major Learning Outcomes: Development of knowledge in healthcare sector and new programming languages.

Details of papers/patents: Confidential information not to be shared.

Brief Description of working environment, expectations from the company: Working environment was very professional and at the same time very conducive for learning. The company invests a lot of time in individual development of each intern.

Name: Ananya (2015H108196P)

Student Write-up

Short Summary of work done during PS-II:I have worked on live projects based on Health economic outcome research like Pipeline validation projects on oncology,Drug coding,Systematic literature review,and Pricing projects.

Tools used (Development tools - H/w, S/w): MS-Excel.

Objectives of the project: Health Technological assessment, cost benefit analysis.

Outcomes of the project: Most efficient and cost effective list of drugs.

Major Learning Outcomes: Ms-excel, SL-PQL.

Brief Description of working environment, expectations from the company: Very good and nice work environment.

Name: Bharath.P (2015H146202P)

Student Write-up

Short Summary of work done during PS-II: I mainly did integrated secondary desk research in various internal projects such as Epidemiology and treatment centers identification, Key opinion leaders (KOL) mapping, Integrated delivery network etc. and basic excel automation using excel VBA.

Objectives of the project: To create an efficient, handy and reliable easy-to-use newsletter dashboard tool using excel VBA to scrape the required latest information about therapeutic areas from free source newsletters to the excel worksheet for further secondary analysis.

Outcomes of the project: Project management skills and time management.

Major Learning Outcomes: Basic idea about the preparation of dashboards and excel automation using excel VBA.

Brief Description of working environment, expectations from the company: Awesome working ambiance with flexible working timings.

PS-II Station: Novozymes South Asia Pvt. Ltd., Bangalore

Student

Name: Raaghavi R (2015H129002G)

Student Write-up

Short Summary of work done during PS-II: My work at Novozymes involved optimization of activity assay for amylase. Amylase is an industrially important enzyme, especially as a detergent. Large scale production of amylase requires high throughput screening of mutants producing the enzyme with desired properties. Optimization is required to avoid batch to batch and lab to lab variation. My work involved developing an assay to distinguish amylase samples based on their substrate preference, i.e., long chain versus short chain and complex versus simple.

Tools used (Development tools - H/w, S/w): H/W: Multichannel pipette, mechanized multi-dispenser, spectrophotometer. S/W: Microsoft excel.

Objectives of the project: The objective of the project was to optimize activity assay for amylase that could help in efficient high throughput screening.

Outcomes of the project: The development of two assays that facilitate assaying amylase and help categorize them based on substrate preference (long chain cutters versus short chain cutters and complex substrate versus simple substrate)

Major Learning Outcomes: High throughput screening, enzyme activity assays and optimization protocol.

Brief Description of working environment, expectations from the company: The work environment at Novozymes is extremely friendly. The employees are very learned and always ready to help. As a trainee, I was given detailed training of all the equipments used and allowed to perform my own experiments. Also, there is also scope for learning additional details and giving feedbacks which are given a patient hearing.

Name: Rashmi Dongerdiye (2015H129010P)

Student Write-up

Short Summary of work done during PS-II: During PS-II at Novozymes I have worked on molecular biology aspects.I have worked on generation of amylase mutants by Site directed mutagenesis. It basically involve generation of amylase clones with desired mutation which have improved enzymes activity as well as stability.The mutations were introduced by Polymerase Chain Reaction using mutagenic primers.After desired mutations are introduced, the mutants are transformed in competent cells.The mutants with desired mutations show zone of clearance on starch agar plates, as starch is the substrate of amylase whereas other with no mutation shown no zone of clearance.

Tools used (Development tools - H/w, S/w): Polymerase Chain Reaction, SDS-PAGE.

Objectives of the project: Generation and Expression of Alpha Amylase Mutants.

Outcomes of the project: 1.Large number of variants were generated 2.There expression were checked by SDS-PAGE

Major Learning Outcomes: 1.Different application of PCR 2.Protein expression study by SDS-PAGE 3.Expertise in Molecular Biology techniques. 4. Ability to troubleshoot the problems faced during performing experiments.

Brief Description of working environment, expectations from the company: The environment at Novozymes is wonderful.They are very strict about employees/trainees health and food habit.It is important that everyone must eat well before starting the work.Everybody from Manager to fellow trainee are very friendly and supporting.They expect that everyone must do their work with full efficiency and safely. In case of any problem while working in lab we are suppose to discuss it with our Research Associate and keep informing them about our work.