

Semester - II notes 2020-21

bitscan

K K Birla Goa Campus



BITS Pilani
K K Birla Goa Campus

from the editor

Dear Readers,

We are pleased to present to you the 23rd Issue of BITSCAN magazine.

Although the campus started functioning in 2004, it was formally inaugurated by the then Prime Minister of India, Dr. Manmohan Singh fifteen years ago - on 5th May 2006.

Though situation is better, we still need to keep our eyes and ears wide open. All of us still continue to go through the most perplexing situation of our times. Although we have good news that vaccination drives are going on successfully across the country, it is definitely not the time to loosen the hold.

Management is very seriously pondering over the matter of calling students back to campus in the new academic year. It is now over a year that functioning of our day-to-day life in the campus changed and yet to come to normal. Students are still not back and we continue to function in an online mode. In these situations the Institute carried its activities, including lectures and seminars, in the virtual mode with absolutely limited interactions in physical formats.

During this semester BITS BIRAC BioNEST started with a series of activities - hackathon to workshop to Roadshow, all in a virtual mode. A few lectures / webinars were also delivered by renowned speakers from India as well as abroad. 28 research projects worth over Rs. 7.2 crores were sanctioned for various departments by government and non-government agencies during this semester. This includes two prestigious Ramalingaswami Re-entry Fellowships by Department of Biotechnology worth over Rs. 2 crores.

In addition to fulfilling teaching and research assignments, our faculty members were engaged in various initiatives including delivering invited lectures and conducting workshops at other institutions, presenting papers on their latest research at national and international events. Many faculty members are appointed on editorial boards and to review reputed international and national journals. Due to ongoing COVID-19 restrictions, almost all these activities had to be held virtually.

Our students continue to win accolades in India as well as abroad and make us proud. Team Grease-Monkeys SAE-BAJA won 1st place in the Sales Event, 2nd place in the Cost Event and secured the 3rd best team position in Overall Static Events among 150 teams from all over India. Team Pegasus secured 1st place in the Design Report and 3rd place in the Technical Presentation sections of the SAEISS Aero Design Challenge 2021. Team Visio, working on a Computer Vision based smart stick to help the visually impaired navigate independently, won 3 prestigious prizes. The list of individual students' achievements in national and international competitions is also a long one - Prayag Mohanty won the Goa & Nagpur cluster final of the digital edition of Tata Crucible Campus Quiz 2021; Shikha Bhat received a scholarship of USD \$1,000 to attend the 2021 APAC Scholars' Virtual Retreat hosted by Google; Anhadveer Khokar (2017A8PS0714G) has been designated a Nikola Tesla Electrical Engineering Scholar, by the EE Department of Columbia University; Vallari Shende was awarded the Khorana Scholarship 2020 being conducted in jointly by DBT, Govt. of India, Indo-U.S. Science and Technology Forum (IUSSTF) and WINStep Forward; Suraj Gupta and Ashutosh Vashist were appointed as Undergraduate Student Researchers at the prestigious INSEAD Business School (Ranked #1 according to FT Global MBA Ranking 2021); and it goes on.

We thank the entire BITS community for their contributions and support in bringing out this issue of BITSCAN.

a confluence of ideas academia

seminars/conferences/workshops/
training programs

An Indo-Danish workshop on Intellectual Property and Technology Transfer

An Indo-Danish workshops on Intellectual Property and Technology Transfer were held on 28th – 30th July and 17th – 19th August. The workshops were supported by the Danish Patent and Trademark Office and Indian Department for Promotion of Industry and Internal Trade under the Indo-Danish Strategic Sector Cooperation (SSC).

The workshop acknowledged the newly decided Green Strategic Partnership between India and Denmark, BITS Pilani. The Innovation Center, Denmark, had partnered to work towards expanding collaboration between BITS Pilani and Danish Universities on knowledge exchange in the field of Intellectual Property (IP) commercialization, technology transfer and R&D by signing a Statement of Intent. BITS Pilani as the Knowledge Partner was invited to participate in a series of five-day workshops to formulate policy around IP commercialization. Along with BITS Pilani, IIT Delhi and Southern Denmark University, and Aarhus University from Denmark participated in the workshop. Mr. Rajneesh Kumar, Technology Transfer Officer and Prof. Sunil Bhand, Dean, SRCD, actively participated and made presentations in the workshops on behalf of BITS Pilani.

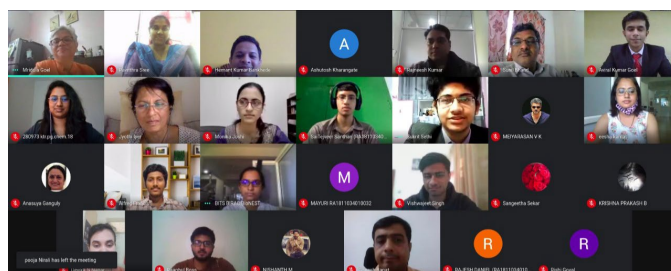
Hackathon 2021 organized by BITS BIRAC Bio- NEST, Goa and CIIE - BITS Pilani

BITS BIRAC BioNEST, Goa and CIIE - BITS Pilani, K. K. Birla Goa Campus, organized Hackathon 2021 from 26th to 28th January 2021 in online mode. The Hackathon was supported by Stademy, an accelerator that mentors start-ups from Goa and Australia. Applications from interested participants were invited on the themes of Health, Genetics, Water and

Waste. The innovations were based on technologies like Artificial Intelligence (AI), Machine Learning, Biotechnology, Bioinformatics, etc.

Top three winning ideas and teams are as follows:

- **‘Visio- Smart device enabling navigation for visually impaired’** by BITS Pilani, K K Birla Goa Campus
- **‘Removal of emerging contaminants from waste water using sustainable Bio-material’** SRM University Chennai
- **‘Ointment formulation for Acne & Anti Scarring using Trash Fish’** St. Joseph’s College, Chennai



Teams from colleges located in Goa, Bangalore and Chennai participated in the three day hackathon in online mode. Out of about 40 ideas, 10 shortlisted teams having ideas in health care diagnosis, treatment, cure and assistive devices, waste segregation and water purification technology presented their Technical and Business Plan in the final round of the Hackathon. Each team worked with assigned technical and business mentors to develop their prototype and business plan during the event. Selected ideas were awarded cash prizes and opportunity to avail six months free incubation support at the BITS BIRAC BioNEST, Goa.

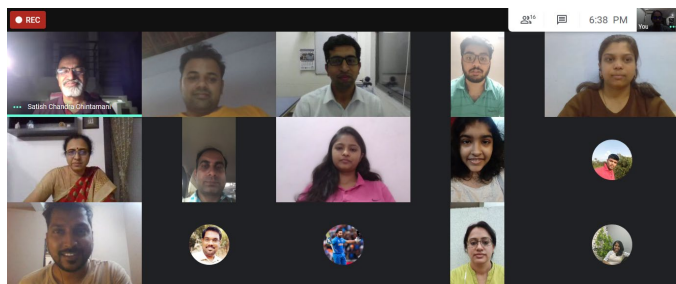
The jury team comprising of Prof. Sunil Bhand - Dean of BITS Pilani’s Sponsored Research & Consultancy Division (SRCD); Prof. Mridula Goel - Incharge of the BITS BIRAC BioNEST, Goa; Ms. Jyothi Iyer - founder of Stademy, Australia; Mr. Rajneesh Kumar - BITS Pilani’s Technology Transfer Officer and CA Ashutosh Kharangate - MD & Founder, Mangal Analytics and Research Consulting, Goa; decided the finalists.

BITS BIRAC BioNEST is an incubator set up by in the BITS Pilani Goa Campus and promotes innovation and entrepreneurship in Healthcare & Environment. The incubator is supported by BIRAC (Biotechnology Industry Research Assistance Council), a Non-profit organization under Department of Biotechnology (DBT), Government of India.

Bio-Entrepreneurship Programme 2021 at BITS BIRAC BioNEST, Goa

BITS BIRAC BioNEST, Goa conducted a 4 week virtual Bio-Entrepreneurship Programme, from 4th Feb 2021. The programme aimed to support and guide the participants to take their ideas from concept to market. 34 participants comprising of faculty members, research scholars and students of Goa University; Parvatibai Chowgule College of Arts & Science, Margao; Dhempe College of Arts & Science, Miramar; PES R.S.N College of Arts and Science, Ponda; Government College of Arts Science and Commerce, Khandola and BITS Pilani participated in the programme. After completion of the month long certified program, these innovators would have access to the Bio-Innovation Lab, of BITS BIRAC BioNEST, Goa for experimental work.

Bio-entrepreneurship is the integration of two dif-



ferent disciplines, science and business. Unlike Entrepreneurship, Bio-entrepreneurship is entirely academia-powered. It is the integrated activity that creates, develops and commercializes the innovated biotechnology product. The sessions were conducted on various topics such as Creativity & Idea Generation, Idea Evaluation, Intellectual Property Rights, Understanding Customers & Market Analysis, Business Model, Basics of Starting a Business, Entrepreneurial Finance, Funding Opportunities and Regulatory Compliances by experts from across India.

Participants were guided by a panel of experts including:

Dr. Abhiram Dukkupati (CEO & Co-Founder- Magellan Life Sciences Pvt. Ltd.),

Dr. Kaustubh Dhargalkar (Founder- Potentials & Possibilities),

Mr. Sameer Gupta (Founder, Haldivita and Corporate CA)

Mr. Satish Chintamani (Executive Director - Institute for Agriculture Technology and Finance Management)

Prof. Mridula Goel (In Charge - BITS BIRAC BioNEST),
Dr. Anirban Roy (Founder-CEO at Epione Swajal Solutions India),

Mr. Rajneesh Kumar (Technology Transfer Officer, BITS Pilani),

Global Bio-India Road Show 2021 - Goa

Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India and its Public Sector Undertaking, Biotechnology Industry Research Assistance Council (BIRAC) organized the annual flagship event: Global Bio-India 2021 from 1st to 3rd March 2021.



Global Bio-India 2021 is a mega international congregation of biotechnology stakeholders, including international bodies, regulatory bodies, Central and State Ministries, SMEs, large industries, bioclusters, research institutes, investors, and the startup ecosystem. As India progresses on this transformational journey, Global Bio-India 2021, the largest Bio event, would showcase opportunities in Indian Biotechnology sector to the world.

BITS BIRAC BioNEST, Goa a bio-incubator located in BITS, Pilani K.K. Birla Goa campus, as an important ecosystem partner has organized roadshows to support the upcoming Global Bio-India 2021.

The first roadshow was an online Panel discussion on the 'Role of funding in the success of a startup' held on 19th February 2021. The panelists comprised of Mr. Bryan Lee (CEO/ Director, Krishi Star), Mr. Anand Parikh (Founder, Shira MedTech and BIG Grantee), Ms. Rashmika Singh (Technology Transfer & Commercialization Officer, BIRAC) and Mr. Rajneesh Kumar (Technology Transfer Officer (Institute wide) BITS Pilani). The session was moderated by Prof. Mridula Goel (In-charge - BITS BIRAC BioNEST, Goa).

7th International Day of Yoga observed

In accordance with the directions of MHRD and Ministry of "AYUSH", BITS Pilani K K Birla Goa Campus observed the 7th 'International Day of Yoga' through



Digital Platform, primarily due to ongoing COVID-19 pandemic, on Monday, 21st June 2021. This year's theme was Yoga @ Home and Yoga with Family. The program

started by lighting the traditional lamp and introducing Yoga Guru Dr. Namdev Chopdekar by Dr. Chandu Lamani, Physical Education Officer.

Dr. Chandu Lamani stated that yoga is a way to maintain physical and mental health, because it can achieve a balance between body and mind, so that professional work and thinking can be better. A large number of students, teachers, professors and their families participated in online yoga session through "YouTube", Google Hangout and Facebook Live.

On this occasion, the yoga guru Dr. Namdev Chopdekar said that in today's mechanical life Environment and pollution, yoga is a necessary condition for maintaining physical and mental health. He also explained the various benefits of yoga and organized group yoga classes for teachers, staff, and students. All yoga and pranayama asanas have received proper scientific instruction. In addition, all participants performed according to the instructions of the digital platform.



Dr. Sougata Sen, Department of CS & IS organized two webinars as part of the ACM IMOBILE (SIGMobile's India chapter) webinar series (<https://imobile.acm.org/past-events/>) remotely on April 09, 2021 and July 12, 2021.

Dr. Sougata Sen also organized the WristSense workshop <https://sites.google.com/view/wrist-sense2021> (co-located with IEEE PerCom'21 http://percom.uta.edu/list_of_workshops) remotely on March 26, 2021.

Webinar on awareness about COVID 19

Press Information Bureau – Ministry of Information & Broadcasting, Government of India in association with National Tuberculosis Institute – Ministry of Health & Family Welfare, Government of India and BITS Pilani, K K Birla Goa Campus organized a webinar titled 'So you become COVID Positive, What Next?' on 6th May 2021 for the BITS community. Dr. N Somashekhar, Director, National Tuberculosis Institute delivered the keynote address and Prof. Raghurama G, Director, BITS Pilani, K K Birla Goa Campus delivered the welcome address.

So you become COVID Positive, What Next?

Webinar
organized by
Press Information Bureau
Ministry of Information & Broadcasting
in association with
National Tuberculosis Institute
Ministry of Health & Family Welfare
&
BITS Pilani, K K Birla Goa Campus

11:00 AM, 6th May 2021

Keynote address
Dr. N. Somashekhar
Director
National Tuberculosis Institute

Welcome note
Prof. Raghurama G
Director
BITS Pilani, K K Birla Goa Campus

Speaker
Dr. Vineet Kumar Chadha
MBBS, MD
Advisor
National TB Institute

Speaker
Dr. C. Ravichandra
CMO-NFSG
Head of Training Division
National TB Institute

Speaker
Dr. Mamatha H G
Consultant Microbiologist,
NRL EQA-DRS Project, NTEP
National TB Institute

Join us LIVE
YouTube / PIBINDIA OR
Scan QR code to watch live

The Speakers included, Dr. Vineet Kumar Chadha (MBBS, MD), Advisor, National Tuberculosis Institute; Dr. C Ravichandra (CMO-NFSG), Head of Training Division, National Tuberculosis Institute; and Dr. Mamatha H G, Consultant Microbiologist, NRL EQA-DRS Project, NTEP, National Tuberculosis Institute. Around 250 participants joined the live session while the YouTube recording of the session was viewed by over 13000 viewers in just 24 hours. The video is available at - <https://youtu.be/-chGJiz1tBU>

alumni affairs

Talks by Alumni/Students On and Off Campus:

Apart from the organization of various events, the ARC was also involved in organizing regular lectures and talks from numerous alumni who have achieved success in their respective fields. Maintaining a strong alumni network, ARC has organized several talks in LTs, the telepresence room as well as online webinars to enable the student community to benefit from the interactions held with the alumni. The following is the list of events conducted:

| Sr. No. | Dates | Title of the Talk | Speaker(s) |
|---------|------------|---------------------|---|
| 1 | 30-01-2021 | BITS2BSCHOOL | Sumiran Mittal Kshitij Jain Shrey Kapoor |
| 2 | 18-03-2021 | Thesis Diaries | Urvashi Jain Devvrit Khatri Awani KhodKhumbhe |
| 3 | 27-03-2021 | Alumni Diaries | Praharsh Pai Raikar Anadi Misra |
| 4 | 28-03-2021 | BITS2Consulting | Gaurav Jha Jay Pandit |
| 5 | 14-04-2021 | BITS2Civil Services | Nagarajan S Deepak Pareek Padma Karri |
| 6 | 17-04-2021 | BITS2Startup | Sanjay Nath Nikesh Kothari Swati Murarka |
| 7 | 03-07-2021 | CAT Champs | Mounil Memaya Chinmay Gokhale Lucky Kaul |
| 8 | 12-07-2021 | BITS2MS/PhD | Arnav Deshpande Ishan Kaul Abhiroop Bhattacharjee |

The collage consists of five screenshots from Zoom meetings, each representing a different BITS2 initiative:

- BITS2CIVIL SERVICES:** The Zoom interface shows participants Nipun Gupta, Alumni Relations, Divyanshu Malik, Kanya, Padma Kanti, Nagirajan S, and Shruti Rastogi. The chat window displays a message from Shruti Rastogi about managing a personal life with Indian Foreign Service and moving to a new country.
- BITS2BSCHOOL:** The Zoom interface shows three speakers: MR. SUMIRAN MITTAL (HEC PARIS), MR. KSHITIJ JAIN (IIM-A), and MR. SHREY KAPOOR (HARVARD BUSINESS SCHOOL). The background features a graduation cap icon and the text "Alumni Relations Cell".
- BITS2CONSULTING:** The Zoom interface shows participants Jay Pandit, Bharunratap Bhardwaj, Ashutosh K, AR, Gaurav Jha, Ritvik Rao, and RR. The background features a graduation cap icon and the text "Alumni Relations Cell".
- BITS2MS/PhD:** The Zoom interface shows three speakers: Arnav Deshpande (PhD in Chemical Engineering at Purdue University), Ishan Kaul (MS in Computer Science from Georgia Institute of Technology), and Abhiroop Bhattacharjee (PhD Research Scholar in neuromorphic circuits at Yale University). The background features a graduation cap icon and the text "Alumni Relations Cell".
- BITS2STARTUP:** The Zoom interface shows three speakers: Sanjay Nath (Co founder & Managing Partner, Blume Ventures), Nilesh Kothari (Co founder & Managing Partner, Trifecta Capital), and Swati Murarka (Investment Professional, Inventus Capital India). The background features a graduation cap icon and the text "Alumni Relations Cell".

Summer Internship Assistance:

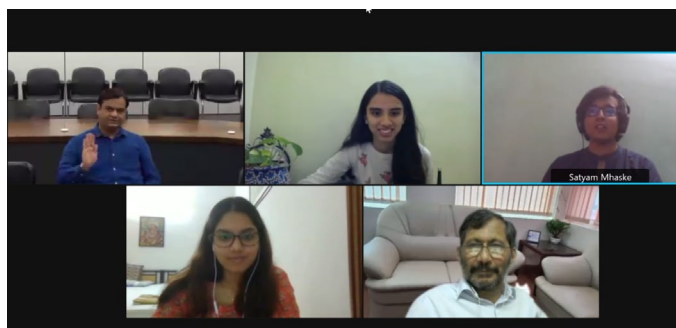
This assistance is offered to encourage students to conduct summer research at educational/research institutions across India (including BITS' campuses). The following are the winners of the latest edition of this assistance:

| Name & ID number | Internship at | Award money |
|-------------------------------------|-------------------|-------------|
| Ashwin Kumar K. (2017B5A81034G) | TIFR Hyderabad | Rs. 20,000 |
| Arya Agarwal (2017B1A10831G) | BITS Goa | Rs. 10,000 |
| Hrishik Sagar (2018AAPS0340G) | IIT Madras | Rs. 10,000 |
| Ayushi Dubal (2019A7PS0099G) | HRI Allahabad | Rs. 10,000 |
| Nishanth Sanjeev (2017A7TS0970G) | Harvard USA | Rs. 10,000 |

Research Scholarship:

One of our alumni, Mr. Satish Sankaralingam, initiated a research scholarship amounting to a total of Rs. 15000 for BE students. Tushar Damani, Mahajan Paranev Parag, Akshay V. and Ithihas Madala were awarded Rs. 7500, Rs. 5000, Rs. 1250 and, Rs. 1250 respectively as recognition of their research work.

Director's e-Party for the Graduating Class of 2021:

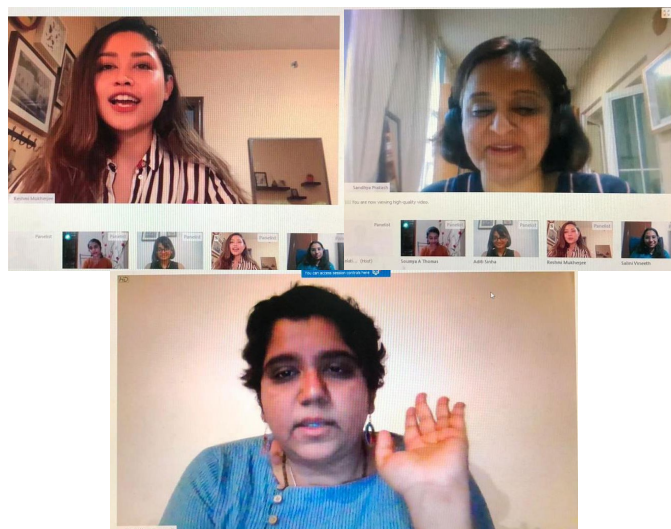


Director's Tea Party marks the beginning of a new chapter for every BITSian, while celebrating a long-lasting and futuristic connection. It has always been a gathering which is full of emotions, memories, heavy hearts and a sense of achievement. Due to the COVID-19 pandemic like last year, this year too, it was held virtually on 12th June 2021. The

class of 2021 was addressed by Prof. G. Raghurama, Director, BITS Pilani K. K. Birla Goa Campus and Prof. Veeky Baths, Associate Dean of Alumni Relations Cell, along with Mr. Mani Shankar Aiyar and Mr. Yashoraj Tyagi, who appreciated the spirit of resilience of the batch of 2021 and gave them best wishes for they are the torch-bearers of BITS Pilani that will lead the future.

International Women's Day celebration by Alumni Affairs

Alumni Affairs celebrated International Women's Day by conducting a virtual event interactive session with renowned alumni viz Sandhya Prakash (Founder, Beacon Energy Solutions and Technology), Sukhnandan Vohra (Photographer, Farmer & Writer), Shruthi Veena Vishwanath (Singer, Composer & Educator), Salini Vineeth (Fiction Writer), Reshmi Mukherjee (Co-founder, The Bhukkad Cafe) and Aditi Sinha (Co-founder, Locale.ai). The event was conducted in the form of a panel discussion where each panelist shared the various challenges she faced from society as a working woman and they overcame those. The virtual event was moderated by Sandhya Prakash.



distinguished lectures/ webinars

| Date | Title of the Talk | Speaker's Name | Organised by Department of |
|---------------|---|---|----------------------------|
| 4th Feb 2021 | Living Glass: Active Matter at High Densities | Prof. Chandan Dasgupta (IISc & ICTS Bangalore) | Physics |
| 23rd Feb 2021 | Network design at 27,000 km/hr. | Debopam Bhattacharjee (ETH Zurich) | CSIS |
| 9th Jul 2021 | Controlling the atom-light interaction for quantum memory and quantum computing | Prof. Lindsay LeBlanc (University of Alberta, Canada) | Physics |

significant projects

| Sr. No. | Title of the Project | Principal Investigator/ Co-investigator and Department | Funding Agency | Proposed/ Sanctioned amount (Rs. In Lakhs) |
|---------|---|--|---|--|
| 1 | Drone Mapping of Mangrove Swamps in Goa | Dr. Shibu Clement Mechanical Engineering | Management of Biological Diversity and Biological Resources under CAMPA, Forests Research & Utilisation Division, Margao- Goa | 5.00 |
| 2 | 2-Sensor Trigno Avanti Mobile System via the DLF Equipment Donation Initiative. (only equipment will be received) | Dr. Ganesh M. Bapat Mechanical Engineering | Delsys-De Luca Foundation, USA | approximately 2.55 (\$3500) |
| 3 | Studying the climate vulnerability in peanut cropping system in Gujarat | Dr. Rajiv Chaturvedi Humanities & Social Sciences | IORA Ecological Solutions Pvt. Ltd. | 2.75 |
| 4 | Evaluation' as a Teaching method: A New pedagogical model to improve knowledge and critical thinking among students | Dr. Reena Cheruvalath Humanities & Social Sciences Co-PI Dr. Geetha B Humanities & Social Sciences | NCERT | 3.70 |

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|----|--|--|--|--------|
| 5 | Utilization of Palm oil effluent and solid sludge for protein production so as to use it as feed additive for animals. | Dr. Srikanth Mutnuri Biological Sciences Co-PI Dr. Anasuya Ganguly Biological Sciences | Godrej Agrovet Limited | 15.23 |
| 6 | Statement of Work (Proof of Concept) for Research & Analysis to efficiently transmit and receive the communication signal over the power distribution line to support: VSG Intel India | Dr. Ashish Chittora EEE Co-PI Dr. M K Deshmukh EEE | Intel Technology India Pvt. Ltd | 10.91 |
| 7 | Polyamines and their involvement in GnRH I regulation and their role in Polycystic ovarian syndrome (PCOS) management | Dr. Arnab Banerjee Biological Sciences Co-PI Dr. Raviprasad Aduri Biological Sciences | DBT | 54.40 |
| 8 | AAP Based Learning for Python Program | Dr. Soumyadip Bandopadhyay CS&IS Dr. Reena Cheruvalath (Consultant) Humanities & Social Sciences Dr. Santonu Sarkar (External Advisor) | Sixth Sense | 15.81 |
| 9 | Studies on Sustainable Eco-friendly Solutions to replace polythene bags/containers used for Horticulture Applications | Dr. Vikas Chaudhari Mechanical Engineering Co-PI Dr. Kiran Mali Dr. Sachin Waigaonkar Mechanical Engineering | Goa State Biodiversity Board (GSBB) | 1.00 |
| 10 | Modelling of Recurrent Infectious Diseases: Understanding the Sustained and Non-periodic Epidemic Patterns | Dr. Anupama Sharma Mathematics | SERB -MATRICS | 6.60 |
| 11 | Understanding the role of P1M1 kinase in modulating tumor -stroma crosstalk in pancreatic ductal adeno-carcinoma (PDAC) | Dr. Nikhil Kumar Biological Sciences | DBT- Ramalingaswami Re-entry Fellowship | 113.60 |
| 12 | Agent-Based Simulation of Covid-19: Estimating the Spread and Disease Burden Using Advanced Epidemiological Modelling | Dr. Vinayak Naik CS&IS Co-PI Dr. Raja Sengupta | Shastri Covid 19 Pandemic Response Grant (SCPRG) | 20.00 |
| 13 | Modelling Forest Phenological Parameters from Time Series Remote Sensing data. | Dr. Rajiv Chaturvedi Chemical Engineering | ISRO Geosphere Biosphere Programme | 29.07 |

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|----|---|---|--|-----------------------------------|
| 14 | Air Dispersion Study (Modeling) of coke particles released during manufacture of CPC from RPC at Goa Plant | Dr. S D Manjare Chemical Engineering | Goa Carbon Limited | 9.25 |
| 15 | Development of commercial methods for (a) synthesis of 4-methoxy-N, 6- dimethyl-1,3,5-triazin-2-amine (b) synthesis of 2-amino-2,3-dimethylbutyramide, (C) resolution of 1-(R) transpermthric acid | Dr. Mainak Banarjee Chemistry | ASTEC Lifesciences Limited | 11.26 |
| 16 | Conservation of the Bilaterian Organizer: Novel studies in the horeseshoe crab, Tachypleus gigas: Muller under the Marine Bioresources and Biotechnology Network Programme | Dr. Sumit Biswas Biological Sciences Co-PI Dr. Malabika Biswas Biological Sciences | DBT | 66.35 |
| 17 | Development of enhanced heat pipes with superhydrophobic and superhydrophobic surfaces and wettability gradients for high density electronics cooling | Dr. Vadiraj Anant Hemadri Mechanical Engineering Co-PI Dr. Siddhartha Tripathi Mechanical Engineering | SERB-CRG | 23.32 |
| 18 | OptimusPrime: Transformer for Security | Dr. Sanjay Kumar Sahay CS&IS | Secure Knowledge Management (SKM) | 2.50 |
| 19 | Prototype Development of the Smart Back Wearable Health Device to Prevent and Manage Recurrent Low Back Pain among Adults. | Dr. Vinayak Naik CS&IS | McGill University | approximately 28.95 (CAD: 50,000) |
| 20 | Mitigation of salt stress in Oryza sativa by overexpression of ABA dependent with No-Lysine kinase 9 | Dr. Kundan Kumar Biological Sciences | SERB-CRG | 35.57 |
| 21 | Vetting of designs for Biofilter based odour control system for sewage treatment plant (11 pumping stations) | Dr. Srikanth Mutnuri Biological Sciences | Larsen and Toubro Ltd (L&T) | 4.28 |
| 22 | TCS Datalab Setup 2 | Dr. Ashwin Srinivisan CS&IS | APPCAIR -TCS | 12.75 |
| 23 | TCS Datalab Setup 3 | Dr. Ashwin Srinivisan CS&IS | APPCAIR -TCS | 12.75 |
| 24 | Elucidation of the mechanism of silica deposition in abaxial epidermal long cells in sorghum bicolor lemma | Dr. Santosh Kumar Biological Sciences | DBT- Ramalingaswami Re-entry Fellowship | 113.6 |

| | | | | |
|----|--|--|------------------|-------|
| 25 | Performance Assessment of the Manufacturing Process of Pig Iron | Dr. S D Manjare Chemical Engineering | Vedanta Limited | 7.02 |
| 26 | Wastewater based epidemiology and screening for Covid19 | Dr. Srikanth Mutnuri Biological Sciences Co-PI Dr. Anasuya Ganguly Dr. Tusar Saha Biological Sciences | BIRAC and BMGF | 83.29 |
| 27 | Designing and delivery of new heating mechanisms to improve the process of recovered material from recycling | Dr. S D. Manjare Chemical Engineering | Uni Black Carbon | 26.56 |
| 28 | DST - Inspire Faculty Award | Dr. Monojit Bhattacharjee Mathematics | DST | 35.00 |

enriching the learning experience visits by faculty

invited talks / workshops by faculty
at other Indian/Foreign institutes

Prof. Basabdatta Sen Bhattacharya, Department of CSIS, participated in a Panel Discussion: Women in Data Science, Mathworks Bangalore India Chapter.

Prof. Basabdatta Sen Bhattacharya delivered an invited talk at Women in Engineering Chapter at NITTE Bangalore.

Prof. Debasis Patnaik, Department of Economics delivered an invited lecture on incubators as tools for entrepreneurship promotion entitled 'The university business incubator: a strategy for developing new research/ technology based firms' at the Institute of Pharmaceutical Technology, Tirupati as part of AICTE Training And Learning (ATAL) Academy's Faculty Development Programme on the theme of Innovation, Incubation and Entrepreneurship on 9th July 2021.

Dr. Hemant Rathore, Department of CSIS, organized a tutorial on "Malware Analysis and Detection" in IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom - 2021).

Dr. Hemant Rathore organized a tutorial on "Malware Analysis and Detection" in IEEE 22nd International Conference on High-Performance Switching and Routing (HPSR 2021).

Prof. Sanjay K. Sahay, Department of CSIS, delivered an invited talk on "Adversarial Artificial Intelligence and Cybersecurity", Allenhouse Institute of Technology, Kanpur, April 30, 2021

Dr. Shilpa Gondhali, Department of Mathematics delivered an online talk titled "**Some Problems/ Area Related to Mathematics**" to School students of Jawahar Navodaya Vidyalaya Canacona, South Goa, under VIGYAN JYOTI PROJECT (Phase-2) - an initiative to promote interest in Science & Technology amongst Girl Students (sponsored & funded by the Dept. of Science & Technology, Govt. of India) on 19th August 2021. BITS Pilani K K Birla Goa Campus is a knowledge partner (KP) in this DST sponsored project.

Prof. Snehanshu Saha, Department of CSIS, delivered a talk on Beyond Hyperparameter tuning: Insights of Deep Learning Methods in AI, ISEC, June 2021.

Prof. Snehanshu Saha delivered a talk on Pointwise Approximations of Error Gradients in Learning, DB3D, Feb 2021, Don Bosco Engineering College, Goa.

Prof. Radhika Vathsan, Department of Physics, delivered a two-part invited webinar on **“Quantum Theory and its application to Information theory”**, refresher course in Physics jointly organized with the UGC-HRDC, Bangalore University on 16th March 2021.

Dr. Solano Da Silva, Department of Humanities & Social Sciences made an online presentation on “Tourism and the Com-modification of Land in Goa, India” at a seminar on *Transforming Tourism: Addressing Land Rights and Corporate Accountability in the ‘Re-Start’ of Tourism* on 18th May 2021, organized by EQUATIONS (India), Fresh Eyes (UK), Kabani – the other direction (India) & Tourism Watch @ Bread for the World (Germany). The session can be viewed online [here](#).



Dr. Sougata Sen, Department of CSIS, delivered an invited talk on behavior monitoring using wearable devices as part of the [ILDP program](#) at Hiroshima University, Japan (remotely held) on July 06, 2021.

Dr. Sougata Sen, delivered an invited talk on ‘Behavior monitoring using wearable devices’ as part of the IEEE student chapter webinar series at IIIT Dharwad, Karnataka (remotely held) on June 05, 2021

Dr. Sougata Sen delivered an invited talk on ‘Behavior monitoring using wearable devices’ at Loyola College of Engineering, Vijayawada, AP (remotely held) on July 9, 2021

Dr. Sougata Sen delivered an invited guest lecture on 'Applications of IoT' at the Continuing Education program, IIT Roorkee (remotely held) on July 15-16, 2021.

Dr. Sravan Danda, Department of CSIS, delivered a talk on 'Power Watersheds and Contrast Invariance' (<https://dgdvc.sciencesconf.org/resource/page/id/2>) at Conference on Digital Geometry and

Discrete Variational Calculus, Marseille, France (remotely held) on March 31, 2021.

Dr. Sravan Danda, Department of CSIS, delivered an invited talk on 'Recent Advances in Mathematical Morphology' at KSRM College of Engineering, Kadapa, Andhra Pradesh (remotely held) on May 4, 2021

Prof. Veeky Baths, Department of Biological Sciences, delivered an invited talk on **“Application of EEG and graph theory for the prediction and interpretation of consumer decision”** at Course5 Intelligence’s virtual event, **Scaling the Human-AI Enterprise** held on 13-14 July 2021.

Prof. Vinayak Naik, Department of CSIS, delivered an invited talk by on Artificial Intelligence for the Buckeye Bridge Lecture Series hosted by the Office of International Affairs and India Gateway of The Ohio State University on March 16, 2021.

faculty achievements

Prof. Angshuman Sarkar, Department of Biological Sciences and his team have investigated a novel mode of action of an already established drug used for the treatment of malaria named 'Quinacrine' for the treatment of human breast cancer. Their work has been published recently in a well-known International Journal '**Biomedicine & Pharmacotherapy**' which publishes papers on clinical and basic medicine and pharmacology. This research work was financially supported by Goa Cancer Society and Department of Biotechnology, Govt. of India.

Dr. Arnab Banerjee, Department of Biological Sciences, has been awarded the **Prof. G P Talwar Young Scientist Award 2021** by the Indian Society for the Study of Reproduction and Fertility (ISSRF) for his contribution in research in the field of reproductive biology.

Dr. Ganesh M. Bapat, Department of Mechanical Engineering won 1st prize in Developing Countries Grant Competition organized during 28th Congress of the International Society of Biomechanics. The award consists of 1000\$ grant to be used for the research work. Students, Ritvik Puranik and Vivek

Gupte contributed to this project.

Dr. Hemant Rathore, Department of CSIS, has been selected to participate at the Google Research India Graduate Symposium – 2021.

Authors J. Sarkar, S. Sarkar, S. Saha, and S. Das were awarded for the best paper entitled as “d-BTAI: the dynamic-Binary Tree Based Anomaly Identification Algorithm for Industrial Systems” in the Main track of 34th IEEE International Conference on Industrial, Engineering Other Applications of Applied Intelligent Systems (IEA/AIE), 2021.

Dr. Rajiv K Chaturvedi, Department of Humanities and Social Sciences contributed in a report titled: ‘Mapping Climate Change Hotspots in Indian Forests based on observed Climate Change and High Resolution Climate Model Projections’ published by Forest Survey of India (FSI). Based on observed historical climate data and by using future climate change projections in the 21st century this report mapped climate change hotspots in Indian forests at a very high spatial resolution. The study concludes that forested grids in Himalayan region and from the north-eastern States consistently appear as climate change hotspots across climate change scenarios and time-horizons.

Prof. Snehanshu Saha, Department of CSIS, authored 7 Top tier International Journal Publications (Scimago Q1) including IEEE Transactions, Elsevier, and Springer.

Prof. Snehanshu Saha authored 6 Top tier International Conference Publications (CORE A Rank).

Dr. Solano Da Silva, Department of Humanities & Social Sciences and a team of international researchers has contributed multiple chapters in a recently published book The Language of the Becoming City based on four years of research on the urban environment. The study explores how urban spaces



es are transformed by people interacting with the world that surrounds them by evoking more just living conditions. It is also an effort to demonstrate how the urban environment could be imagined in ways that differ from the neoliberalist view. Other imaginations, arising from different perspectives on and incentives for development, such as equity and inclusiveness, might produce another city entirely. The book is based on fieldwork from four different urban contexts in Sweden, South Africa, India and Brazil.

Palmer, Henrietta (ed.) The Language of the Becoming City: Making Spatial Justice from Conflicts, Commons, Networks and Hybridity, Berlin, JOVIS Verlag GmbH. Preview the book at: <https://www.jovis.de/en/books/product/the-language-of-the-becoming-city.html>

Dr. Sougata Sen, Department of CSIS, worked with undergraduate students to start the ACM Student chapter at BITS Pilani Goa.

Dr. Sougata Sen published in a CORE 2020 A* conference that has moved to a journal publication format in CORE 2021 (<http://portal.core.edu.au/core/media/justification/CORE2021/4607ISWC.pdf>)

Mr. Tirtharaj Dash, Department of CSIS, was selected to participate at the Google Research India Graduate Symposium.

Mr. Tirtharaj Dash was selected for the ICML 2021 Workshop on Computational Biology Fellowship.

student achievements

Team GreaseMonkeys SAE-BAJA won 1st place in the Sales Event, 2nd place in the Cost Event and secured the 3rd best team position in Overall Static Events among 150 teams from all over India.

Baja SAE is a Collegiate Design Series competition run by the Society of Automotive Engineers International (SAE International). Teams of students from universities all over the world design and build small off-road cars. All cars have engines of the same specifications. The goal in Baja SAE racing is to design, build and race off-road vehicles that can withstand

the harshest elements of rough terrain. The 13th edition of BAJA SAEINDIA in the year 2021 received a total of 282 registrations from all over the country. The competition takes place in two phases that are The Virtuals and The Main Event. Only the teams clearing virtuals go for the main event. Top 150 mBAJA teams and Top 50 eBAJA teams are selected from the virtuals to show their skills and knowledge in the main event.



The Main Event took place over 5 days (from 21st to 25th April 2021) with various events divided in two categories - Static and Dynamic events. Due to the ongoing Covid-19 pandemic scenario, the BAJA SAEINDIA OC decided to have a virtual main event with Static and Dynamic events conducted on different platforms online.

Team GreaseMonkeys SAE-BAJA accepted the challenge with a highly motivated team of 25 students and designed an ATV virtually to compete in BAJA SAEINDIA 2021. The team excelled with clearing Virtuals and participated in the Main event with full confidence and determination.

The Static Event is the combination of Design, Manufacturing, CAE analysis, Sales and cost events where teams have to submit reports and then present them in front of a panel of judges. Static events are one of the most important parts of the main event as it caters the students to learn all the basics of setting up their own project as an automobile Company.

Team GreaseMonkeys SAE-BAJA was among the top 15 teams who got selected for the vehicle design finals. From the overall awards in the static events, the team was placed 1st in the Sales Event, 2nd in the Cost Event and secured the 3rd best team position in Overall Static Events among 150 mbaja teams from all over India.

The entire team has put in a very valiant effort

throughout the year and at a difficult time in achieving these results.

The Core Coordinating Team Members:

| | |
|--------------------|---------------|
| Shashank Sonpawale | 2018A4PS0533G |
| Suhas Badadal | 2018B1A40600G |
| Yagyant Thacker | 2018A4PS0529G |
| Smit Joshi | 2018A4PS0516G |
| Amal Nair | 2018A4PS0802G |
| Shresth Agarwal | 2018A4PS0944G |

Other Team Members:

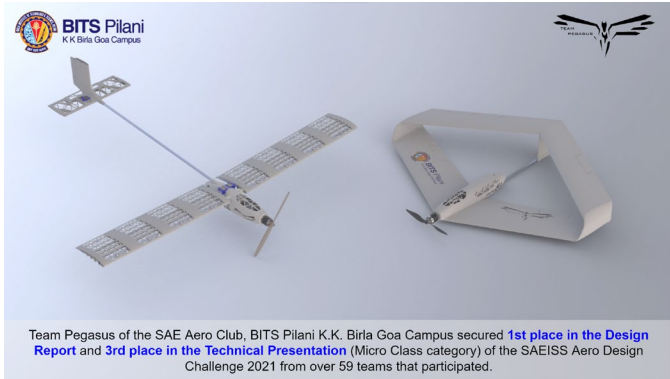
| | |
|---------------------|---------------|
| Sharvil Bartake | 2019A4PS0274G |
| Anshul Kumar | 2019A4PS0651G |
| Aksh Rajput | 2019A4PS0745G |
| Soham Mahajan | 2019A4PS0040G |
| Siddharth Awale | 2019A4PS0808G |
| Agam | 2019A4PS0521G |
| Anurag Goyal | 2019A4PS0475G |
| Ameya Saunshimath | 2019A4PS0626G |
| Sagar Batra | 2019A4PS0569G |
| Dev Mehta | 2019B1A41084G |
| Zainah Shaikh | 2019B2A11078G |
| Prakriti Srivastava | 2019A4PS0628G |
| Ishant | 2019A4PS0531G |
| Akshay Sheth | 2019A4PS0797G |
| Hemant Srivastava | 2018B1A40956G |
| Prashant Raghava | 2019A4PS0763G |
| Aditya | 2019A4PS0766G |
| Ayush Gupta | 2019A4PS0743G |

Team Pegasus secured 1st place in the Design Report and 3rd place in the Technical Presentation sections of the SAEISS Aero Design Challenge 2021.

59 teams from reputed institutions from across India participated in the challenge that was held in an online mode. The event ran over ten months in which teams had to conceptualize and design a UAV that met the mission profile of the competition. The students of Team Pegasus created two innovative UAVs for the challenge, one with a morphing wing that made it capable of carrying varied payloads with different flight times. The other is a joined wing configuration that significantly reduces drag without sacrificing lift.

The Aero Design Challenge is a UAV design competition conducted by the Society of Automobile Engineers India Southern Section (SAEISS). Each team

is required to conceive, design, and develop a prototype of a fixed-wing UAV meeting the mission requirements. The challenge features two classes, Regular and Micro. The competition featured five categories for each of the two classes: Video Presentation, Application Report, Fabrication Report, Design Report, and Technical Presentation.



The Design report was the primary means of conveying how the aircraft was designed for the mission focusing on the design process and the aerodynamics of the proposed UAV. The Technical Presentation involved pitching the design in front of a panel of judges. The team followed an innovative approach in design and presentation to bridge the gap that the team had in terms of experience as this was their second time participating in the competition. The entire competition started in August 2020 and ended in July 2021.

Prof. Ranjit S. Patil, head of the Mechanical Engineering Department, BITS Pilani, Goa Campus, mentored the team which consisted of Ashvin Ramesh (Captain) (2018A4PS0559G), Pragalb Singh (Vice-Captain) (2018A4PS0517G), Pranjal Anand (2018A4PS0874G), Deven Paul (2018A4PS0047G), Paul Jacob (2019B5PS0809G), Vardhan Shah (2019A4PS0665G), Ishan Neogi (2019A4PS0393G), Rachit Gupta (2019A3PS0466G), Dritiman Sinha (2019AAPS0005G), Shivank Maheshwari (2019A4PS1036G), Rajat Garg (2019B4PS0282G) and Gaurav Shinde (2019B5PS0852G).

Team Visio comprising of **Aviral Kumar Goel** (2019A7PS0166G) and **Vaibhav Ganatra** (2019A7PS0010G) are working on a Computer Vision based smart stick to help the visually impaired navigate independently. Since January 2021, the team has following achievements to its credit:

1. Social Innovation Challenge 2020 (Jan 2021): First prize in Social Innovation Challenge 2020 organized by Indian Institute of Science (IISc) and Keio University, India Japan Laboratory. Over 150 teams across India participated in this hackathon. The team received a cash prize of Rs. 50,000. Further details and Results at - <https://csp.iisc.ac.in/SIC2020/>

Following this, the team presented the proof of concept for smart device to enable navigation for the visually impaired in a Virtual conference at the India-Japan Laboratory Joint Webinar Series on 'India Japan Innovation Potentials on Technology, Culture and Development' organized by the Indian Institute of Science (IISc) and Keio University, Japan. More details - Prize Winners of the Social Innovation Challenge | India Japan Laboratory

2. Hackathon 2021 (Jan 2021): First prize in Hackathon 2021 organised by BITS BIRAC BioNEST Incubator and Centre for Innovation, Incubation and Entrepreneurship (CIIE), BITS Pilani, Goa in collaboration with Stedemy (Startup Academy), Australia. The team received a cash prize of Rs. 20,000. They received an Incubation Offer from BITS Birac BioNest.

3. Virtual Impact Hackathon (May 2021): First prize in Virtual Impact Hackathon organised by Giftabled Foundation in lieu of Global Accessibility Awareness Day.

4. Falling Walls Lab India 2021 Finalist (August 2021): The team was selected in National Top 16 finalists for Falling Walls Lab India 2021 organised by DWIH New Delhi, DAAD German Academic Exchange Service and Academy of Scientific and Innovative Research (AcSIR). (https://www.linkedin.com/posts/dwih-new-delhi_fwlandia-innovatorsconnect-dwih-activity-6833249918413508608-rwBP)

5. PI-WOT 2021 Startup showcase by PanIIT Alumni India (September 2021): More than 270+ startups participated throughout India and after the final round of screening, only the Top 10 startups were selected in all four early/social/b2b/growth stage tracks. The team's startup was selected in the social category.

Cohorts - The team has also been selected in Conquest BITS Pilani Top 10 (July 2021) out of 1000+

registrations in the BITSian Track and in the Cisco thingqinator Cohort-4 Top 30 (September 2021) out of 812 teams.

Team 'left_on_read', consisting of Raturaj Godse (2019A7PS0002G), Shikha Bhat (2019A7PS0063G), Astitva Sehgal (2019B5A70640G) and Naresh Chavan (2019B5A70638G) secured 2nd position in all India level and 51st in the worldwide ranking in the Reply Challenge 2021: Teen Edition, which is a worldwide online team-based coding competition. The 4-hour challenge involved solving 5 problems using algorithms. For more details, please visit <https://challenges.reply.com/tamtamy/challenge/code-teen-2021/stats>

Team Giriko consisting of Giransh Sasan (2018B1A10587G), Richa Naik (2018AAPS0267G) and Kopal Srivastava (2018B1AA0594G) were declared the National Winners of Product Construct, a Product Management Case competition organised by IIT Madras, where they won a cash prize of INR 25K.

Kaustubh Mururdhkar (2019B5A80769G), Paurush Punyasheel (2019B4A30184G), Ankit Verma (2019A1PS0887G), Abhay Kamble (2019A7PS0128G) and Yashraj Patil (2019B5A31038G) participated in the International Astronomical Search Collaboration conducted in India by SEDS India. This event was for citizen scientists to look at data generated by Pan-Stars Observatory and identify potential asteroids in the data. The campaign by the aforementioned students was successful and two submissions were recognized as provisional discovery of Main Belt asteroids – 2021 Dh7 and 2021 EZ41.

Kashyap Mehta (2018B4A70655G) and Ashwani Kottapalli (2018B4A70646G) secured Runner-Up Position in the Alzheimer's Disease and Cognitive Decline track out of 1100+ hackers from 48 countries organized by WSIS Forum '21. The World Summit on the Information Society (WSIS) in collaboration with the Global Coalition on Aging (GCOA) organised a virtual hackathon named Ageing Better with ICTs. As part of WSIS Forum 2021, co-organized by ITU, UNESCO, UNDP and UNCTAD, the hackathon was focused to build solutions based on 17 sustainable development goals of the UN. This hackathon was fo-

cused on ideating and building solutions for healthy ageing with the help of ICTs.

Devesh Kumar (2019AAPS0270G) was selected as a Google Summer of Code (GSOC) '21 Developer at JBOSS. <https://drive.google.com/open?id=11TM-L7X0s4EDBNDZEI-HVjPiTFDed7OyJ>

Sarthak Gupta (2019AAPS0290G), a member of the top 30 teams selected worldwide as the finalists of the Innovate4Health Challenge by Johns Hopkins University. Sarthak was the only BITSian in a 3 member team that completed the challenge.

Akash Jha (2018B5A80893G) was selected in Ethereum India Fellowship 2.0 as Track 1 fellow in January 2021. He was part of a 20 student developer cohort out of over 2000 applications from all over India. Top web2 developers from all of India were selected to educate and train them in web3. For further information about the fellowship: Blog Post
More recently, Akash also won the Polygon Bounty in EtherPunk Hackathon for his project DMon - a NFT based AR trading card game. He also won the GeoSpatial Marketplace bounty for Harmony One Love Hackathon for his project GeoSpatia.

Prayag Mohanty (2020A3PS0566G) won the Goa & Nagpur cluster final of the digital edition of Tata Crucible Campus Quiz 2021 that was telecasted on YouTube, Twitter and LinkedIn on 19th March 2021 and Times Now on 26th June 2021. He received a cash prize of Rs. 35,000/- and proceeded to the western zonal finals of the quiz, as part of the top 24 quizzers in the country. He is the youngest champion to proceed to the round of 24.

Ishan Yagnik (2020A3PS1756G) won the Consultathon 2.0 along with other members - Rishabh Dowerah, Amaan Sadri, Aastha Bharill.

Sayani Mallick (2019AAPS0218G) was selected as an Outreachy open-source intern for Eclipse Adoptium for the project "Simplify and gamify external AQA tests". This year only 71 interns were selected from all over the world out of about 7000 applicants. Sayani also received the honor of being selected as a speaker at EclipseCON 2021 on the project 'Gamifying external tests in Eclipse Adoptium using machine

learning and Twitter’.

Himanshu Jain (2019A3PS0423G) became the first BITSian across all 3 campuses to crack a product role at MPL (Product Manager @ MPL) at the end of second year. Himanshu ranked 9th in India in ProDuScope 2021 organised by E-Cell, IIT Guwahati & PM School from July 12 to July 20. More than 390+ teams across India participated from different B-Schools, Engineering Colleges and various product communities with leading product leaders. He also won 2 times PM School India Weekend Case Challenges for TESLA and MX TakaTak.

Dev Churiwala (2018B1A70602G) was selected to be a part of the prestigious Tezos India Fellowship 2.0 cohort organized by the Tezos Foundation in July 2021. This fellowship is awarded to the most exceptional software developers. This year only 30 fellows were selected from over 3800 applicants. Over the course of the fellowship, Dev developed Decentralized Exchange Liquidity Pools on the Tezos blockchain, used for highly efficient StableCoin trading. Apart from invaluable mentorship from industry leaders, he was also granted a stipend of \$2000 as part of the fellowship. More info about the fellowship can be found here - <https://devfolio.co/blog/tif-strikes-back-for-the-next-edition/>.

Shikha Bhat (2019A7PS0063G) received a scholarship of USD \$1,000 and to attend the 2021 APAC Scholars’ Virtual Retreat that took place at the end of June, hosted by Google. The Generation Google Scholarship for women in Computer Science was established to help aspiring students pursuing computer science degrees excel in technology and become leaders in the field. The scholarship was awarded based on a passion for technology, academic excellence, demonstrated leadership, and commitment to diversity, equity, and inclusion.
<https://buildyourfuture.withgoogle.com/scholarships/google-scholarship-recipients/>
<https://buildyourfuture.withgoogle.com/scholarships/generation-google-scholarship-apac/>

Shreyash Singh (2020A3PS1252G) won the 1st prize in ‘DREAMS All Goa College Level Online Essay Competition’ organized by GREEN ARMY in February 2021. The results were declared in June 2021.

Shreyash received a cash prize of Rs. 5000 and a certificate.

Harshitha Kamath Miyar (2020H1290002G) II Year student of ME Biotechnology secured 2nd place in the poster presentation section for her BE project titled “Fungal Hydrophobins: Characterisation and Gold Nanoparticle Synthesis”, at APOGEE 2021 hosted by BITS PILANI, Pilani Campus held on 20th - 21st March 2021.

Rakshit Mittal (2017A8B40984G - dual degree student of Department of Electrical and Electronics Engineering and Mathematics), Rochishnu Banerjee (2018A7PS0140G – student of Department of CSIS), Dominique Blovin (Télécom Paris, France) and Soumyadip Bandyopadhyay (Asst. Professor, CSIS) received the Best Position Award Certificate for their paper entitled ‘Towards an Approach for Translation Validation of Thread-level Parallelizing Transformations using Colored Petri Nets’ at the 16th International Conference of Software Technologies (ICSOFT) held from 6th to 8th July 2021.

Rakshit Mittal (2017A8B40984G), a dual degree student of Department of Electrical and Electronics Engineering and Mathematics, under the supervision of Dr. Soumyadip Bandyopadhyay, won the Third Prize in the ACM Student Research Competition Grand Finals Undergraduate Track 2021. Rakshit got qualified to participate in the grand final by winning the First Prize at the ACM Student Research Competition, PLDI 2020. Rakshit is the second student from India to win this prize after a IIT Bombay student won it in 2009. Both the student and the advisor are invited to the ACM’s Awards Banquet scheduled to be held on October 23rd, at the Palace Hotel in San Francisco, CA (Covid permitting).

Siddhartha Shandilya, PhD Student of the Department of Mechanical Engineering won the Bright Idea Competition on Innovation and Entrepreneurship held on 23rd January 2021 organized by DSIR-PRISM- TOCIC IIT Guwahati in association with BITS Pilani, Pilani Campus. The title of his proposal was ‘Enhancement of Thermal Efficiency of Burner by Enhancing Design of Gas Burner’.

Anhadveer Khokar (2017A8PS0714G) has been des-

ignated a Nikola Tesla Electrical Engineering Scholar, by the EE Department of Columbia University. This honour is awarded to the most exceptional applicants to the graduate program (about 15-17 applicants per year). Upon joining Columbia, Tesla Scholars receive a scholarship of \$2,500 and in addition, they are invited to participate in special academic and cultural events organized in their honour, along with the EE faculty. More information about the Tesla Scholarship: <https://sites.ee.columbia.edu/nikola-tesla-electrical-engineering-scholar-program>

Eibel Salil bagged the first prize (\$800) in the 'Open Innovation' track of the 'Think With Terra' ideathon organized by Terra India and Lumos Labs. The ideathon was a national event that challenged the Indian developer community to share their knowledge of what can be accomplished with blockchain technology by identifying issues that people face on a daily basis, be it in the overall business industry or for causes such as the COVID-19 pandemic. The medium article announcing the results of the ideathon published by Lumos Labs in: <https://medium.com/lumos-labs/we-wrapped-up-the-think-with-terra-ideathon-200-ideas-with-blockchain-applications-96eb48a25385>

Pranav Mahajan (2017AATS0277G), a final year Electronics and Communications Engineering undergraduate under the guidance of Prof. Veeky Baths recently published a first author original research article in the Frontiers in Aging Neuroscience journal (Impact factor: 4.362). The paper focuses on deep learning-based approaches for the early detection of Alzheimer's dementia from spontaneous speech. For further details please find the paper here -<https://www.frontiersin.org/articles/10.3389/fnagi.2021.623607/full> (open access).

Vallari Shende (2017B1A70699G), fourth year student pursuing dual degree in M.Sc. Biological Sciences and B.E. Computer Science was awarded the Khorana Scholarship 2020 being conducted in joint support by The Department of Biotechnology (DBT), Govt. of India, Indo-U.S. Science and Technology Forum (IUSSTF) and WINStep Forward. She is also awarded the Future Research Talent Awards 2020 jointly offered by ANU College of Science, ANU College of Health and Medicine and ANU

College of Engineering and Computer Science to students from India. Under this program, she will be doing a two-month remote summer internship at Australian National University. She will be working under the guidance of Dr. Jean Wen on a project based on Computational Biology of RNAs.

Anagha Rajesh (first year student MSc Chemistry) secured the first position in the Jot It Down AI Article Writing Contest. This competition witnessed participation from university students across India. It was organised by Marktechpost.com, a California based Artificial Intelligence platform with approximately 70,000 visitors per month and 30,000+ Facebook members. As the winner, Anagha will be awarded INR 6000 and a one-month long consultation internship at Marktechpost.com. Her article revolved around the role of AI in transforming the stories we tell.

Prayag Mohanty, a first year student of EEE won the Goa & Nagpur cluster final of the digital edition of Tata Crucible Campus Quiz 2021 that was telecasted on 19th March 2021 on Youtube, Twitter and LinkedIn. He has received a cash prize of Rs. 35,000 and proceeded to the zonal finals of the quiz.

Given below is the report of the same from the website of the quiz:

<https://www.tatacrucible.com/campus/report2021/cluster12.html>

The quiz finals' video:

<https://youtu.be/RB5GvwFq3UI>

Suraj Gupta (2017B2A30329G) and Ashutosh Vashist (2017A1TS0892G) were appointed as Undergraduate Student Researchers at the prestigious INSEAD Business School (Ranked #1 according to FT Global MBA Ranking 2021) to work on a project in the entrepreneurship domain from January 2021 under the Department of Entrepreneurship and Family Enterprise.

Faculty members appointment on national/ international advisory committees/ acted as reviewers for books/ journals of national/ international repute

| Faculty Name | Department of | Name of Advisory Committee / Editorial Board |
|-----------------------------------|---------------------|---|
| Prof. Rajesh Mehrotra | Biological Sciences | (i) Reviewed an article entitled "Seed to seed early season cold resiliency in sorghum" by Yves Emendock et al., for Frontiers in Plant Sciences. |
| | | (ii) Reviewed First high throughput transcriptomic analysis reveals new players involved in Al-resistance in popcorn (Zea mays) for Nature Scientific reports. |
| | | (iii) Reviewed an article entitled "Genome wide comparative analysis of GATA transcription factors among 19 Arabidopsis ecotypes Genomes: Intraspecific characteristics of GATA for PloS One. |
| | | (iv) Reviewed an article entitled Ancestral sequence of a large promiscuous enzyme family correspond to bridges in Sequence space in network representation by Jargan Pleiss et al., for Journal of Royal Society interface. |
| | | (v) Reviewed an article entitled "Genomic diversification of dehydrin gene family in vascular plants: three distinctive orthologue groups and a novel KS dehydrin conserved protein motif for nature Scientific Reports. |
| | | (vi) Reviewed an article entitled Transcriptome analysis of response and memory strategy in <i>Hemerocallis fulva</i> under drought stress for nature Scientific Reports. |
| | | (vii) Reviewed an article entitled Genome wide identification and <i>in silico</i> analysis of BCL-2 associated anthogene (BAG) family in MUSA Spp for Scientific Reports. |
| | | (viii) Reviewed an article entitled In silico analysis and expression profiling of S-domain receptor like kinases (SD-RLKs) under different abiotic stresses in Arabidopsis thaliana for BMC genomics. |
| Prof. Basabdatta Sen Bhattacharya | CS&IS | Journal Review: IEEE Transactions in Artificial Intelligence, Frontiers in Computational Neuroscience, Human Brain Mapping, Neural Network, Cognitive Systems Research; BOOK REVIEW: Ranking, the social game we all play by Peter Erdi |
| Dr. Pritam Bhattacharya | CS&IS | Reviewer for BITS-ICON (International Conference on Best Innovative Teaching Strategies) 2021 |
| Prof. Sanjay Kumar Sahay | CS&IS | Editorial title: Advances in Secure Knowledge Management in the Artificial Intelligence Era DOI: 10.1007/s10796-021-10179-9 |
| Prof. Snehanshu Saha | CS&IS | Editor, European Journal Special Topics; Reviewer-NuuroIPS21 & ICLR21 |

| Faculty Name | Department of | Name of Advisory Committee / Editorial Board |
|-----------------------------|------------------------|---|
| Dr. Sougata Sen | CS&IS | <ul style="list-style-type: none"> (i) Editorial Board, Elsevier Ad Hoc Networks (ii) Reviewer, ACM Transactions on Computing for Healthcare (iii) Reviewer, Elsevier Pervasive and Mobile Computing (iv) Reviewer, ACM Interactive, Mobile, Wearable and Ubiquitous Technologies (v) Reviewer, ACM Transactions on Internet of Things (vi) Technical Program Committee Member, EAI International Conference on Mobile and Ubiquitous Systems (vii) Editorial Board of Elsevier Ad Hoc Networks Journal (viii) Reviewer for ACM Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) journal, ACM Transactions on Internet of Things (TloT) journal, ACM Transactions on Computing for Healthcare (HEALTH) journal, Elsevier Pervasive and Mobile Computing (PMC) journal (ix) Technical Program Committee member for the following conferences: ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS), Workshop on Serverless To sErVE moRE at Scale (STEERS), IEEE International Conference on Pervasive Computing and Communications -- industry track, IEEE International Conference on COMMunication, Systems and NETworkS (COMSNETS), IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS) |
| Dr. Soumyadip Bandyopadhyay | CS&IS | Research Advisor, AGH advisor ACM Transactions on Software Engineering and Methodology |
| Dr. Sravan Danda | CS&IS | Section Editor (Oct 2020 - July 2020) Springer Encyclopedia of Earth Sciences Series: Encyclopedia of Mathematical Geosciences |
| Dr. Swaroop Joshi | CS&IS | <ul style="list-style-type: none"> (i) Associate Editor, Journal of Engineering Education Transformation (JEET) (ii) Journal of Engineering Education Transformations |
| Mr. Tirtharaj Dash | CS&IS | Program Committee Member: International Joint Conference on Neural Networks (IJCNN-2021), International Conference on Artificial Neural Networks (ICANN-2021) Reviewer for: IEEE Transactions on Cybernetics, IEEE Transactions on Network Science and Engineering, Neural Processing Letters |
| Prof. Vinayak Naik | CS&IS | The Thirteenth International Conference on COMMunication Systems and NETworkS (COMSNETS), Bangalore, India from Jan 5-9, 2021 |
| Dr. Ashish Chittora | EEE | IEEE Transaction on Microwave Theory and Techniques, IEEE Microwave and Wireless Component Letters |
| Dr. Ashwin K P | Mechanical Engineering | Reviewer for Journal: Mechanism and Machine Theory |
| Dr. Devendra G Patil | Mechanical Engineering | <ul style="list-style-type: none"> (i) IEEE Transactions on Industrial Electronics (ii) Applied Sciences (MDPI) (iii) Reviewed ASME -Journal of Energy Resources Technology |

| Faculty Name | Department of | Name of Advisory Committee / Editorial Board |
|--------------------------------|------------------------|---|
| Dr. Iniyan Thiruselvam | Mechanical Engineering | European journal of remote sensing |
| Prof. Pravin Singru | Mechanical Engineering | (i) Measurement (Elsevier) (ii) Mechanical Systems And Signal Processing (Elsevier) (iii) Journal Of Vibroengineering (iv) Structures |
| Dr. Varinder Singh | Mechanical Engineering | (i) Reviewed Papers for The Sixth International Conference on Economic and Business Management, FEBM 2021 at Sanya, China (ii) Contributed to decision for award of \$5000 for Marketing Science Institute USA Alden G. Clayton Doctoral Dissertation Proposal Competition |
| Prof. Prasad Naik | Physics | (i) Appointed a core member of the Programme Advisory Committee II (Physics) of the Science Education and Research Board (SERB) of the Department of Science and Technology (DST) for a 3 year term. (ii) Nominated as a member of the "Goa State Higher Education Council" by the Directorate of Higher Education, Govt. of Goa. Earlier on, he was a member of the ad hoc committee appointed by Govt. of Goa for giving suggestions on implementation of the New Educational Policy (Higher education) in Goa. |
| Dr. Swastibrata Bhat-tacharyya | Physics | (i) Reviewed a paper for the international journal, Physical Review B published by American Physical Society (ii) Reviewed 1 paper from the journal Physical Review B |

introducing new faculty

| Name | Department | Designation | Area of Research Interest |
|----------------------------|---------------------|---------------------------|---|
| Sougata Sen | CS & IS | Assistant Professor, Gr-I | Mobile & Wearable Computing, Pervasive & Ubiquitous Computing, MHealth, IoT |
| Swaroop Ravindra Joshi | CS & IS | Assistant Professor, Gr-I | Computing Education Research, Programming Languages, Software Engineering |
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Cover Picture:

The then Prime Minister of India, Dr. Mammohan Singh speaking at the formal inauguration of BITS Pilani, Goa Campus on 5th May 2006 in presence of Shri. B K Birla; the then Chief Minister of Goa, Shri. Pratapsingh Raoji Rane; Chancellor of BITS Pilani, Dr. K K Birla and the then Vice Chancellor of BITS Pilani, Prof. S. Venkateswaran (L to R).

BITS Pilani

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mediaspeak

Research on drug against breast cancer by BITS Pilani professor gets recognition

THE GOAN NETWORK

A novel mode of action of an already established drug used for the treatment of malaria named 'Quinacrine' for the treatment of human breast cancer has been investigated by Prof Angshuman Sarkar, associate professor at the department of Biological Sciences at BITS Pilani, Goa who worked on this research along with his team. Earlier this team had proved the repurposing of this drug in treating human lung cancer too. Now they have shown that specific cytotoxicity of this drug works on human breast cancer cells too. Excluding this repurposing drug typical mode of action, they have also shown an internal modification through other cellular events on accelerated cell death in human breast cancer.



Prof Angshuman Sarkar

Biological Sciences at BITS Pilani, Goa who worked on this research along with his team. Earlier this team had proved the repurposing of this drug in treating human lung cancer too. Now they have shown that specific cytotoxicity of this drug works on human breast cancer cells too. Excluding this repurposing drug typical mode of action, they have also shown an internal modification through other cellular events on accelerated cell death in human breast cancer.

Their work has been published recently in a well-known International Journal 'Biomedicine & Pharmacotherapy' which publishes papers on clinical and basic medicine and pharmacology. This research work was financially supported by Goa Cancer Society and Department of Biotechnology, government of India.

Based on observed historical climate data and by using future climate change projections in the 21st century, this report mapped climate change hotspots in Indian forests at a very high spatial resolution. The study concludes that forested grids in Himalayan region and from the north-eastern States contributed to this prestigious report.

BITS faculty contributes to FSI climate change report

THE GOAN NETWORK

PANAJI

Forest Survey of India (FSI) has recently published a report titled: 'Mapping Climate Change Hotspots in Indian Forests based on observed Climate Change and High Resolution Climate Model Projections'. Dr Rajiv K Chaturvedi, Assistant Professor, Dept of Humanities and Social Sciences, BITS Pilani, K K Birla Goa Campus has contributed to this prestigious report.

Based on observed historical climate data and by using future climate change projections in the 21st century, this report mapped climate change hotspots in Indian forests at a very high spatial resolution. The study concludes that forested grids in Himalayan region and from the north-eastern States contributed to this prestigious report.



Dr Rajiv K Chaturvedi

change hotspots across climate change scenarios and time-horizons.

Recently Dr Chaturvedi has also contributed to India's Third Biennial Update Report (BUR), that Ministry of Environment, Forest and Climate Change, Government of India recently submitted to the United Nations Framework Convention on Climate Change.

Dr Chaturvedi, has contributed to this report as an external reviewer along with

renowned scientists, experts and officials in the field from reputed Indian academic institutions and government offices.

India is a signatory to the United Nations Framework Convention on Climate Change, as such India periodically reports about its national circumstances, national GHG inventory, mitigation actions, and an analysis of the constraints, gaps and related finance, technology and capacity building needs, including information on domestic measurements, reporting and verification.

Following are links for those reports:

<http://webline.org.in/technical-information-series-vol2-nov2020.pdf>

https://unfccc.int/sites/default/files/resource/INDIA_2020BUR3_20.02.2021_High.pdf

BITS Pilani K K Birla Goa Campus celebrates Int'l Yoga Day

NT KURIO CITY

In accordance with the directions of MHRD and Ministry of 'AYUSH', BITS Pilani K K Birla Goa Campus observed the 7th International Day of Yoga through the digital platform. This year the theme was 'Yoga at Home and Yoga with Family'. Present at the celebration was yoga guru Namdev Chopdekar.

Physical education officer, Chandu Lamani stated that yoga is a way to maintain physical and mental health because it can achieve a balance between body and mind, hence professional work and thinking can be better. A large number of students, teachers, professors and their families participated in the online yoga session.



Yoga guru Namdev Chopdekar during the yoga session

Speaking on the occasion, Chopdekar said that in today's mechanical life environment and pollution, yoga is a necessary condition for maintaining physical and mental health. He also

explained the various benefits of yoga and organised group yoga classes for teachers, staff and students. Participants performed according to the instructions of the digital platform.

THE GOAN NETWORK

Wed, 10 March 2021
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mail us at >> desk@thegoan.net

Wednesday February 3, 2021

IN SHORT >>

Top three winning concepts emerge at Hackathon-2021 held online at BITS Pilani



PANAJI: BITS BIRAC BioNEST, Goa and CIE - BITS Pilani, K K Birla Goa Campus organized Hackathon-2021 in online mode from January 26-28 wherein top three teams came with winning ideas. Hackathon, supported by Stedemy, an accelerator that mentors start-ups from Goa and Australia, received applications from participants on the themes of health, genetics, water and waste. The innovations were based on technologies like Artificial Intelligence (AI), Machine Learning, Biotechnology, Bioinformatics. The top three winning ideas and teams were declared on the occasion. The first being 'Visio-smart device enabling navigation for visually impaired', a concept presented by team BITS Pilani, Goa. The second winning idea was that of the 'Removal of emerging contaminants from wastewater using sustainable bio-material' which was submitted by the SRM University, Chennai. The third concept was, 'Ointment formulation for acne and anti-scarring using trash fish' which was presented by St Joseph's College, Chennai.

Teams from colleges located in Goa, Bengaluru and Chennai participated in the three-day hackathon in online mode.

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