Semester - II notes 2019-20

bitscan

K K Birla Goa Campus

Industry 4.0: CEO Conclave
Day 2, 11:35 AM - Audi

The Department of Photography
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innovate   achieve   lead

from the editor

Dear Readers,

We are pleased to present to you the 21st Issue of BITSCAN magazine. All of us faced the most perplexing situation of the recent times during the last semester. The ongoing COVID-19 pandemic, which affected more than 200 countries, has put forth several novel challenges before us. Since mid-March, the entire functioning of our day-to-day life in the campus completely changed. Last semester, all students were asked to vacate the hostels by mid-march and all courses were moved online immediately thereafter. Some people very severely impacted due to the unexpected halt in routine life. BITS provided all possible support including distributing necessary grocery items. In April and July BITS distributed over 5.5 tonne of grocery worth over Rs. 2.1 Lakhs to economically weaker sections residing in areas surrounding the campus.

Till then, during this semester we hosted several exciting events including conferences, seminars, workshops, expert lectures, etc., which contributed in enriching the experience of our BITS community.

In January, much awaited fourth edition of the Global Meet of BITS alumni was successfully organized by BITS Pilani Alumni Association - BITSAA, along with their alma mater BITS Pilani. Over 1100 alumni of the four campuses participated in the 3-day Meet. The educator, innovator & ecowarrior, Mr. Sonam Wangchuk set the tone for the event with an inspiring vision of simplicity and sustainability. During this meet, the Vice Chancellor of BITS Pilani, Prof. Souvik Bhattacharya inaugurated the state-of-the-art Central Sophisticated Instrumentation Facility (CSIF), which is fully funded by the BITS Pilani. Directors of all four campuses were also present for the inauguration function.

Several national level seminars, conferences, workshops, etc. were organized by different departments which included International Conference on Economics and Finance (ICEF 2020), 3rd International Workshop of the Society of the Cognitive Science of Culture (SCSC 2020), Alumni Research Talks (ART) 2020, International Conference on Innovations for Water Treatment and many other resourceful events.

Hiroshima University (Japan), Indian Institute of Management, Ahmedabad, and BITS Pilani, K. K. Birla Goa Campus, jointly organized the TAOYAKA On-site Training Program. Various departments also organized around 11 lectures by eminent speakers from India and abroad at our campus. One of major events held online was a two-day Summer Symposium of AI Research organized by Society for Artificial Intelligence and Deep Learning (SAiDL) in association with Anuradha and Prashanth Palakurthi Centre for Artificial Intelligence Research (APPCAIR) held in July which was attended by over 3000 participants from around the world.

31 research projects worth over Rs. 8 crores were sanctioned for various departments by government and non-government agencies during this semester. 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, and visits to renowned Indian and foreign institutions to establish and further the collaboration. Many faculty members are appointed on editorial boards and to review reputed international and national journals.

Our students continue to win accolades in India as well as abroad and make us proud. PhD students of Department of Biological Sciences, Reshma Zakane and Prajakta Bhende along with Dr. Gauri Achari, a PhD from the department volunteered in the COVID lab at Goa Medical College. They were involved in performing RNA extraction and RT-PCR for detection of SARS-CoV2. Even during the lockdown our students continue to contribute towards betterment of society by proactively serving the community around our campus through Nirmaan and Center for Entrepreneurial Leadership.

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

BITSAA Global Meet

BITS Pilani Alumni Association (BITSAA) Organizes the Fourth BITSAA Global Meet (BGM) in Goa

BITS Pilani Alumni Association, BITSAA, with their alma mater BITS Pilani, organized the fourth edition of the Global Meet of its alumni at BITS Pilani, K. K. Birla Goa Campus. BITSAA has over 84000 alumni spanning over six decades.

BGM which was held from 17 to 19 January 2020, was attended by over 1100 participants which included alumni from all the four campuses. This BGM followed in the footsteps of the three previous successful ones which were held in Delhi, Hyderabad and Dubai starting from 2011 at an interval of three years. The current edition of the event was unique as it has many firsts to its credit.

The educator, innovator & ecowarrior, Mr. Sonam Wangchuk set the tone for the event with an inspiring vision of simplicity and sustainability. The event matched his vision of environment consciousness in the best way—it was ecofriendly and used no disposables or single-use plastics and instead used steel bottles, water dispensers and reusable crockery—gutsy move that proved that if people can take a little inconvenience, we can make dramatic changes to our consumption.

Using technology to reach out to a wider audience, the entire three-day event was available over a phone app which connected the organisers, who are alumni themselves, with the delegates. All main events were telecast live to reach worldwide audiences.

The Chancellor, Dr. Kumar Mangalam Birla, in his welcome note honoured the alumni by naming them the brand custodians of BITS. He expressed his respect and gratitude to the alumni in coming "together as an active entity to infuse new ideas and possibilities" and to benchmark themselves with the alumni of the most prestigious schools, globally. The Vice Chancellor, Prof. Souvik Bhattacharya exhorted the alumni to work together on the journey to excellence in his welcome address.

An alumnus of the institute, Ms. Revathi Advaithi, CEO of Flex, a 25 billion dollar US company with over 1,77,000 employees, presented great insights into managing businesses—with repeatable processes and consistent goals, inspiring the girls to break all ceilings and students to pursue their dreams. She is one among the fifty most powerful women in the world.
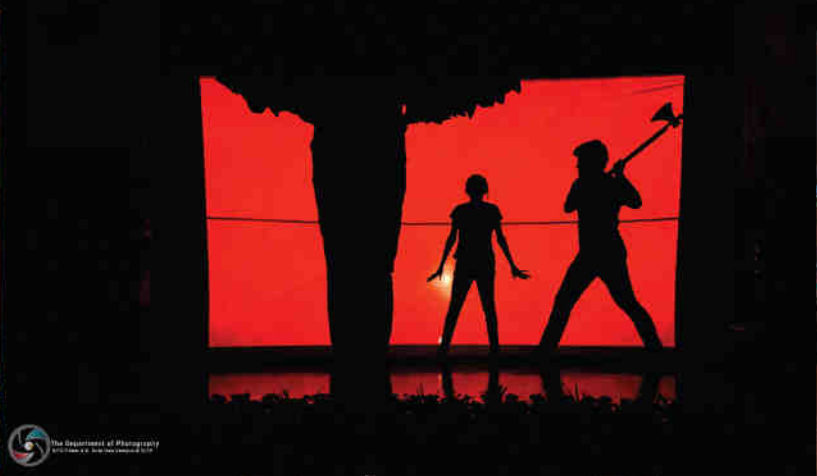
The articulate cricketer and engineer Mr. Anil Kumble enthralled the audience with his journey with his plan B, cricket. Plan A, of course, was engineering.

The theme of the event was "Finding Purpose, Creating Value, Inspiring Excellence". Each of these themes inspired multiple sessions running in parallel tracks. Speakers and topics ranged from India's space odyssey, building unicorns and careers in social causes and sports and startup pitches under BITS spark. Alumni mentored the present students in a special session. The directors of all campuses interacted with the alumni. The alumni relations team shared a view on the current events on the campuses and future plans.

Running multiple tracks under the hobBITS umbrella unearthed extraordinary and powerful stories of individuals who set out to do something different. Alumni in civil services discussed their challenges and contributions to the country. Sanjay Jalona, CEO L&T Infotech, received recognition as a distinguished alumnus of the institute. Proving that engineers can be creative too, exhiBITS showcased charcoals, sketches, oil paints, digital art, photography and book covers by the alumni.

Mr. Arko Mukhaerjee, a world musician, captured the evenings with his mellifluous rendition of folk songs in many languages; his 'contemporary music' allured the participants to spontaneously break out dancing under the stars. Prof. Ramanan Laxminarayan of Princeton University, another Distinguished Alumnus of BITS Pilani, delivered

an electrifying valedictory address exhorting current students to embrace the massive technology trends that will change our world and to build their careers around solving some of the greatest challenges mankind has ever faced.

Lively performances by the alumni, members of the Dance, the Drama, the Mime and the Arts club added to the fun elements. The event ended on a high with an invigorating and charging drum circle and a surprise dance performance by the students. The logistics of the events were massive involving coordinating people moving across Goa and were managed smoothly by the organising team. With something for everyone, an opportunity to learn, network, relax and reconnect, the event hit the sweet spot with the alumni and set new high standards for global reunions.

Central Sophisticated Instrumentation Facility (CSIF) inaugurated

A state-of-the-art Central Sophisticated Instrumentation Facility (CSIF), fully funded by the BITS Pilani, was inaugurated by the Vice Chancellor of BITS Pilani, Prof. Souvik Bhattacharya, at BITS Pilvani, K. K. Birla Goa Campus on 17th January 2020.

The CSIF currently houses various high-end sophisticated instruments for scientific research, including Liquid chromatography—mass spectrometry (LC-MS) unit, Raman Spectrometer, X-Ray Diffractometer, Confocal microscope, Field Emission Scanning Electron Microscope (FE-SEM), and Nuclear magnetic resonance (NMR) spectrometer to name a few. This facility aims to help the researchers of BITS as well as researchers of Goa and neighbouring regions.

"The facility is fully functional except NMR which is scheduled to be operational from March 2020. The facility is open for researchers across all the campuses of BITS Pilani as well as scientists from academic institutions/universities across India. The facility also caters to the industry in Goa and elsewhere" mentioned Prof. Ram Shanker Patel, the faculty incharge of the facility.

The facility has appointed trained technical staff to assist the researchers and PhD scholars to carry out their experiments. Scientists and researchers interested in making use of this facility can visit https://www.bits-pilani.ac.in/goa/csif/home or e-mail csif.office@goa.bits-pilani.ac.in to know further details about experiments and pricing.
The Vice Chancellor of the University and The Director of all the four Campuses with other dignitaries present during the inauguration

a confluence of ideas
academia

seminars/conferences/workshops/ training programs

International Conference on Economics and Finance 2020
By Rajorshi Sen Gupta, Department of Economics

The Second International Conference on Economics and Finance (ICEF) was organized by the Department of Economics, BITS Goa, in collaboration with University of Missouri during 23-25 January 2020. In the inaugural address, the Director Prof. Raghurama G. emphasized on asking the right questions and creating solutions that is beneficial to the society. Prof. Aswini K. Mishra, the Head of the Department

of Economics shed light on the ongoing collaboration between academia and industry.

During the three-day event, the audience was enlightened by current research insights from the eminent speakers from India and abroad. The Keynote Speaker, Mr. Jeffrey C. Thomson, President and CEO of IMA (Institute of Management Accountants), stressed on the growing need and motivation for the businesses to incorporate social & environmental considerations and adopting "purpose based leadership".

Prof. Avanidhar Subrahmanyam, Distinguished Professor of Finance, Goldyne and Irwin Hearsh Chair in Money and Banking, The John E. Anderson Graduate School of Management, University of California at Los Angeles (UCLA), gave an insightful plenary lecture on challenges of big data in finance and explained how economic fundamentals & consumer sentiments predict stock returns. Dr. Hamza Ali Malik (Director, Macroeconomic Policy and Financing for Development Division, United Nations ESCAP) stressed on prioritizing and mapping the progress of SDGs and the need to invest in People, Planet and Prosperity for sustainable long-term development. Dr. Sweta Saxena (Chief, Macroeconomic Policy and Analysis, UN-ESCAP)) shed light on economic Booms, Crises, and Recoveries and explained the "illusionary phase" of economic recovery post-crises.

Prof. Sanket Mohapatra, IIM Ahmedabad explained how stronger insolvency regimes can reduce the default risk of firms. Mr. Jaywardhan Semwal, VP, Hewlett Packard, elucidated the evolving nature of Finance from being retrospective to predictive to now being prescriptive. Prof. Sujeet K. Sharma, IIM Trichy,

elaborated on the research opportunities for social science scholars in data analytics. Dr. Joyojeet Pal, Microsoft Research India, provided amazing insights on how social media drives election campaigns and results. He presented 'Politwictionary,' a database of nearly 18,500 Indian politicians, tracking their activities, consistency and popularity on social media platforms. Prof. Prakash Singh, IIM Lucknow, explained the importance of non-quantitative component of company Annual Reports. Prof. Vairam Arunachalam, (Director of the School of Accountancy & PWC/ Joseph A. Silvoso Distinguished Professor, University of Missouri) provided insights on asset misappropriation and financial statement fraud.

The conference provided insights on latest advancements like Global Economic Conditions Survey (GECS) conducted by IMA. Despite improved consumer sentiments and recovery of global confidence, the downside risk and uncertainties persist in the global economy in the light of on-going US-China trade tensions and Brexit. Overall, the three-day event, which was funded by IMA and NABARD, enriched the audience with applications of AI, ML, social media on the economic landscape of the world in general and India in particular.

Two-day Workshop on 'Membrane Processes for Application in Food, Water and Health Sector' Organized by BITS BIRAC BioNEST

BITS BIRAC BioNEST organized a two-day workshop on **'Membrane Processes for Application in Food, Water and Health Sector'** on 31st Jan. & 1st Feb., 2020.

The workshop was conducted in collaboration with the Department of Chemical Engineering. Faculty members, researcher scholars and students from Bannari Amman Institute of Technology (Erode, Tamil Nadu); KIT's College of Engineering (Kolhapur, Maharashtra); Yeshwant Mahavidyalaya (Nanded, Maharashtra); Dhempe College of Arts & Science and Parvatibai Chowgule College of Arts & Science
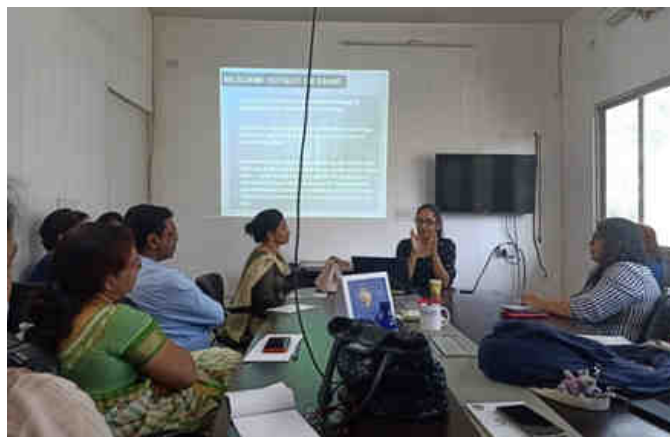
participated in the hands-on workshop.

Membranes play a pivotal role in separation industry from water treatment to hemodialysis. The workshop focused on various applications and synthesis on lab. scale to industrial scale with hands-on sessions on membrane synthesis, handling, potting, spinning and experiments with waste water treatment and coconut water processing. Participants experienced the hands-on sessions and got insights of membrane market especially in desalination and hemodialysis.

BITS BIRAC BioNEST provides incubation support to entrepreneurs in health and environment by providing them equipment, space and supporting facilities to test their ideas, prototype in the lab and take it to the market.

BIG Awareness Workshop (February 03, 2020)

BIG is flagship programme of BIRAC, which provides the right admixture of fuel and support to young start-ups and entrepreneurial individuals. BIG is the largest early stage biotech funding programme in India. Funding grant of up to INR 5 Million (USD 70,000 approx.) is awarded to the best in class with innovative ideas to build and refine an idea to proof-of-concept.

One of the objectives of the workshop was to provide guidance for BIG application to Individual entrepreneurs (Research scholar, Scientist & Faculty) and Startup. Research scholars, students and faculty from various colleges of Goa participated in the workshop. The resource persons Dr. Neelanjana, Senior Program Manager, C-CAMP; Prof. Mridula Goel, In-charge, BITS BIRAC BioNEST & Dr. Susmita Ghosh, Co-founder, DiagnoRite Innovative Healthcare, handled the sessions for the candidates and helped them to get their queries clarified regarding BIG application.

Third International Workshop of the Society of the Cognitive Science of Culture (SCSC 2020)

The Cognitive Neuroscience Lab. at the Department of Biological Sciences successfully hosted the Third International Workshop of the Society of the Cognitive Science of Culture (SCSC 2020) from 4th to 7th Feb., 2020.

Local organizing chair, Prof. Veeky Baths, Associate Professor, Department of Biological Sciences, welcomed the participants on behalf of Society for Cognitive Science of Culture. Prof. Regine Kolinsky, was the Chief Guest at the workshop. She serves as the Research Director of the National Fund for Scientific Research (FRS-FNRS), Head of the Research Unit in Cognitive Neurosciences and Professor at Université Libre de Bruxelles, Belgium. Our Director, Prof. G. Raghurama provided encouraging introductory thoughts. Prof. Ramesh Mishra from University of Hyderabad delivered the vote of thanks.

SCSC was founded on 22 June 2018 in Lisbon, Portugal. This society aims to encourage discussion of the latest developments in the cognitive science of culture, to provide a platform for exchanging ideas, and a network to foster collaborations among interested researchers. Another important aim of the society is public outreach, for instance, to promote the application of research findings for the greater good of humanity.

Keynote lectures were delivered by 12 invited speakers from Belgium, Portugal, Brazil, Israel and Switzerland. In addition, three keynote lectures were delivered by Indian experts in the field of cultural cognition.

The four-day event brought together around 50 scientists and academic scholars from all across the country to discuss and present their research findings that study the effect of culture and other social conditions on cognition. The conference included 30 participants and 15 Poster presentations. The conference concluded with discussions on collabo-

rative research feedback of the workshop from the participants were taken. The next SCSC workshop will be held in Brazil in 2021.

The workshop was jointly organized by BITS Pilani, K. K. Birla Goa Campus, University of Hyderabad and Max Planck Institute of Psycholinguistics, Netherlands.

BITS Goa held TAOYAKA On-site Training Program in association with Hiroshima University and IIM, Ahmedabad

Hiroshima University (Japan), Indian Institute of Management, Ahmedabad, and BITS Pilani, K. K. Birla Goa Campus, jointly organized the TAOYAKA On-site Training Program on the theme of 'Beach Tourism -- Creating Stakeholder Value and Ensuring Environmental Sustainability' at BITS Pilani, Goa Campus. A group of 15 students from Hiroshima University (Japan), University of Texas at Austin (USA), IIM Ahmedabad and BITS Pilani, Goa Campus, participated in this one-week program held from 12th to 20th February 2020.

Prof. Prem Pangotra, Professor Special Appointment, Hiroshima University, Japan & Former Professor at IIM Ahmedabad; Dr. Tomomi Yamane, University Research Administrator, Hiroshima University, Japan; Prof. Shinji Kaneko, Professor, Hiroshima University, Japan and Dr. Solano Da Silva, Assistant Professor, Department of Humanities and Social Sciences conducted various sessions of this training program.

The objectives of this training programme was to provide the participants an opportunity to learn, through onsite experience, the complex issues involved in balancing the environmental impacts of beach tourism with the potential for creation of substantial economic value for various stakeholders and local communities. Students visited beaches at Benaulim and Colva and interacted with representatives of key stakeholders and community representatives as well as received inputs from experts on the social, cultural and economic impacts of beach tourism.
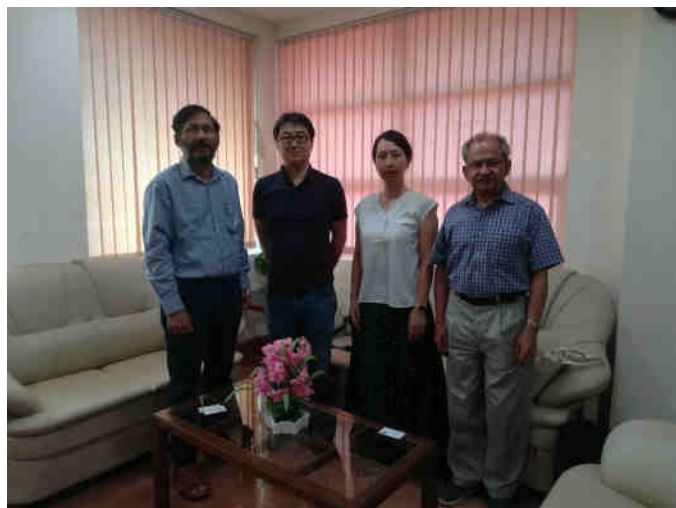
Photo (left to right):
Prof. Raghurama G, Director, BITS Pilani, K. K. Birla Goa Campus
Prof. Shinji Kaneko, Professor, Hiroshima University, Japan
Dr. Tomomi Yamane, University Research Administrator, Hiroshima University, Japan,
Prof. Prem Pangotra, Professor Special Appointment, Hiroshima University, Japan & Former Professor at IIM Ahmedabad,

A two-day BIRAC Sensitization Workshop on "Grant-Writing, Intellectual Property & Technology Management in Life Sciences"

Program was designed for start-ups, University Community to learn about aspects and importance of Intellectual Property, Technology Transfer and Commercialization process. It also focused on effective grant writing skills for the researchers and start-ups

The workshop was conducted by BIRAC in association with BITS Pilani, K. K. Birla Goa Campus, on 14th and 15th of Feb., 2020. The guest speakers were Dr. Shirshendu Mukherjee, Mission Director, GCI, BIRAC; Dr. Vinita Jindal, Chief Manager, IP & Technology Management, BIRAC; Dr. Malathi Lakhsmikumaran, Head-Patents, L&S, and Dr. Sudhakar Bangera, AILEEN Clinical Research Services.

Participants from reputed educational institutes

such as Maratha Mandal's College of Pharmacy, Belgaum Karnataka; KLE College of Pharmacy, Belgaum, Karnataka; Dr. N G P ARTS AND SCIENCE College, Coimbatore, Tamil Nadu, participated in the workshop. Faculty & Research students from Institutions in Goa, such as, Dhempe College of Arts & Science, Panaji; Goa College of Pharmacy, Panaji, and BITS Pilani, K. K. Birla Goa Campus, also participated.

Alumni Research Talks (ART) 2020
Written by Rhea Khotian, Rayan Doshi, Hritik Khanna, Yash Bhartia and Noah Candido Martins

"Our chief want is someone who will inspire us to be; what we know we could be" — Ralph Waldo Emerson

This truly resonated as the message at the second edition of Alumni Research Talks (ART). Conducted on the 15th of February, 2020, the event featured interactive sessions by six eminent alumni of BITS Pilani, who shared their stories of success, and delved a bit into their research interests, and how they could affect the future as we know it. The event was graced by the Director of the campus, Prof. Raghurama G. and Associate Dean of Alumni Relations Cell, Prof. Veeky Baths.

A series of talks were given by these eminent alumni of BITS Pilani namely: Prof. Y.N. Mohapatra, Professor of Physics and Materials Science, IIT Kanpur; Prof. Jugal Kishore Verma, Professor of Mathematics, IIT Bombay; Dr. Shruthi Sridhar Vembar, Facul-

ty Scientist, Institute of Bioinformatics and Applied Biotechnology, Bangalore; Prof. Subrat Kar, Professor & Head, SeNSE, IIT Delhi; Prof. Subramanian Yashonath, Professor of Solid State and Structural Chemistry Unit, IISc Bangalore and Prof. Patrick Das Gupta, Professor of Physics and Astrophysics, University of Delhi.

Beginning at 2 p.m., these talks were delivered to enlighten the students attending by dipping toes into their research interests, and inspiring them with their tales of successes.

Prof. Y.N. Mohapatra, a professor and a physicist of material sciences at IIT Kanpur; through his invigorating talk, made us realize the difference in electronics then and now and how it might change in the coming years. He concluded his talk by discussing the products of the future, and left the audience with ample knowledge about his field to pique their interests and motivate them to pursue research on them.

Professor Jugal Kishore Verma, a professor of Mathematics at IIT Bombay, began by discussing the decomposition of matrices and analysis of data, describing its applications in low rank approximation (in images), data compression, and the computation of

matrix norms in linear algebra. As he went further into his discussion, he spoke of principal component data and the history of singular value decomposition (SVD); techniques that originated years earlier but took a while to perfect an algorithm. Today, it is used widely in data science. He concluded by saying how his initial interest in mathematics gradually shifted to physics.

Dr. Shruthi Vembar, a professor at the Institute of Bioinformatics and applied Biotechnology, Bengaluru; took us through her research of elucidating novel modes of epigenetic and post-transcriptional gene regulation in malarial parasites. Malaria, caused by intracellular protozoan parasites of the genus Plasmodium, remains a major threat to global health, with half of the world's population at risk. She enriched the audience with her published work and projects of the lab. which works on the discovery of a new drug and vaccine given as an effective anti-malarial vaccine, and the emergence of parasite drug resistance to first line therapies.

Prof. Subrat Kar, an electrical engineer, a teacher and the head faculty member at the SenSE laboratory, IIT-Delhi; gave a refreshing talk on academic life as a student. He started his talk by a small thought that the only thing worthy of learning is the ability to learn and continued to build upon the curious nature of students. He further elaborated on student life giving numerous analogies from practical life and technical fields. He ended his talk with a moving poem titled "If," by Rudyard Kipling, based on self-confidence, pride and persistence.

Not many scientists find themselves in the same conversation as Albert Einstein. Even fewer can claim to have proved him wrong. Hence it comes as no surprise that silence grips a room full of students every time Professor Yashonath Subramanian speaks. Although they may not all realize it, in this silence is embedded with a deep sense of respect and awe, maybe even humility. A faculty member of IISc., Bangalore, Prof. S. Yashonath specializes in the area of theoretical chemistry: new computational techniques, phase transformations in solids, diffusion and its variation with radius of the diffusant, pressure and density in different condensed matter phases. During his lecture at the Alumni Research
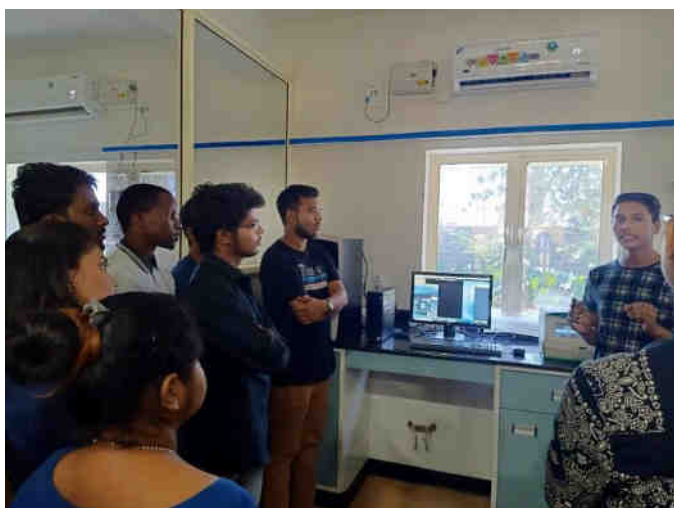
Talks, he spoke about one of his key discoveries, the implications of which included a breakdown in the Stokes-Einstein relationship; the Levitation Effect, i.e., the discovery of anomalous dependence of diffusivity on radius of the diffusant.

Prof. Patrick Das Gupta, a professor of Physics and Astrophysics at the University of Delhi spoke on understanding the cosmos; he managed to take the audience with him through his journey in his field and gave us inspiring insights into his world of the stars. Taking the packed room with him, he raised the existential question of whether we are the only planet with life in the Milky Way. Speaking about how gravitation is the main source of energy, he wrapped his galactic journey about the mysteries of the universe, leaving the audience with a hunger to learn more.

The event came to a conclusion with Prof. Veeky Baths thanking the alumni speakers, audience and the Institute for extending the support in organizing this event and also ensured that this will continue for years to come in order for the students to have a long lasting impact in their lives and studies at BITS.

Numerous colleges and universities throughout Goa were invited to attend, including IIT Goa, GEC, Agnel Polytechnic and the Padre Conceicao College of Engineering.

A visit by Post graduate students of Biotechnology from Goa University to BITS BIRAC BioNEST Innovation Lab

The postgraduate students of Biotechnology from Goa University along with their faculty, Dr. Meghnath Prabhu, visited the BITS BIRAC BioNEST Innovation Lab on 22nd Feb. 2020 to see the facility, equipment available and demonstration of a few of those.

The students were actively involved in team-building and visited the Innovation lab. facility. They were impressed with the facility of Innovation lab. They also visited the STP (Sewage Treatment Plant) as well as the bio-gas plant in the campus and appreciated the Institute's contribution to sustainable environment.

International Conference on Innovations for Water Treatment

An international conference on "Photo-irradiation and Adsorption based Novel Innovations for Water-treatment (PANIWATER)" and general assembly was held at BITS Pilani, K. K. Birla Goa Campus, from 3rd to 6th March, 2020. PANIWATER is an international cooperation research and innovation project sponsored by Department of Science and Technology, Government of India, and European Commission (EC). The PANIWATER Project is one of the seven projects sponsored by the European Commission (EC), the Department of Science and Technology (DST) and the Department of Biotechnology (DBT), Government of India, that will be implemented between 2019 and 2023.

The conference was inaugurated by Dr. Rakesh Kumar, Director of CSIR-NEERI and Prof. Raghurama G., Director of BITS Pilani, Goa Campus, in presence of Prof. Kevin McGuigan, PANIWATER Coordinator, Royal College of Surgeons Ireland (RCSI), Dr. Rita Dhodapkar, PANIWATER Indian Coordinator, CSIR-NEERI, Nagpur, Prof. Halan Prakash, Organizing Secretary and Head, Department of Chemistry, BITS Pilani, Goa Campus, and Dr. Sukdeb Pal, Co-Principal Investigator, PANIWATER, CSIR-NEERI. Dr. Rakesh Kumar, delivered a plenary lecture on "Challenges of Water and Wastewater Sector: India Story".

PANIWATER technical sessions had four keynote lectures, nine invited talks, eleven short talks, eighteen poster presentations, and a workshop session on

water quality and hygiene. Royal Society of Chemistry, U.K. sponsored best posters awards to the three winners—Ms. Sanchita Das, CSIR-NEERI, Nagpur, Ms. Smita Gupta, BITS Pilani, Goa, and Mr. Habeeb Rahman, KIIT, Bubhaneswar. The winners of the best short presentation were Dr. Nishant Dafale, NEERI, Nagpur, Dr. Irene Salmeron, CIEMAT, Spain and Mr. Deepak Panchal, NEERI, Nagpur. All these young talented researchers works in the diverse areas of water research. Sixteen prominent EU scientists leading the consortium from European countries presented their research findings at PANIWATER conference. About 50 Indian scientists working in the area of water research did the deliberations on the status of water quality and treatment practices in our country. PANIWATER conference also had a workshop session where about 50 school children directly interacted with scientists and social scientists. A water quality testing kit will be provided to JNV School, Canacona, for learning and practical use by students.

Around the world, about 2.1 billion people live without access to safe water sources. Contaminants of Emerging Concerns (CECs) such as pharmaceuticals, personal care products, pesticides, nanoparticles, geogenic pollutants, pathogens, antibiotic resistant bacteria and antibiotic resistance genes are increasingly being detected in wastewater and in drinking water around the world. Notably, CECs are highly persistent and easily escape the conventional water treatment. Water treatment systems that remove CECs and common contaminants from wastewater and drinking water are therefore urgently needed.

PANIWATER project consortia aims to develop, and prototype six innovative technologies that remove CECs and other pollutants from water. The PANIWATER Project consortium consists of world-renowned Universities, Research Centers, Organizations and SMEs. The consortium members from India are Council of Scientific and Industrial Research, National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur; Birla Institute of Technology and Science Pilani, K. K. Birla Goa campus (BITS), Goa; Kwality Photonics Pvt. Ltd. (KPP), Hyderabad; Auroville Foundations (AWS), Pondicherry; Development Alternatives (DEVALT), New Delhi, and Society for Technology & Action for Rural Advancement (TARA), New Delhi. Members from EU include Royal College of Surgeons, Ireland (RCSI); University of Ulster (UU), UK; Institute of Technology, Sligo, (ITS) Ireland; Maynooth University, (MU) UK; University Rey Juan Carlos (URJC), Spain; University of Santiago de Compostela (USC), Spain; CIEMAT-Plataforma Solar de Almeria (CIEMAT) and University of Almeria, Spain; New University of Buckinghamshire (BUCKS), UK; AQUASOIL (SRL), Italy; Universita del Salento, (UNISAL), Italy; INNOVA (SRL), Italy and University of Cyprus, (UCY), Cyprus.

Sitting L to R : Prof. Halan Prakash, PANIWATER Indian Dy. Coordinator, BITS Goa, Dr. Rita Dhodapkar, PANIWATER Indian Coordinator, CSIR-NEERI, Nagpur, Dr. Rakesh Kumar, Director, CSIR-NEERI, Nagpur, Prof. Kevin McGuigan, PANIWATER European Coordinator, RSCI, Ireland, Prof. Raghurama G., Director, BITS Goa, Dr. Sukdeb Pal, PANIWATER Investigator, CSIR-NEERI, Nagpur

School children from Canacona, Goa, observing the water quality test demonstrated by PANIWATER Social Scientists team from Development Alternatives, and TARA, New Delhi

Webinar on "Building Vibrancy in Entrepreneurship in Goa"

BITS BIRAC BioNEST arranged a webinar with Prof. Mrutyunjay Suar, CEO, KIIT-TBI on 15th July 2020. The session was helpful for the institutional & incubator heads, aspiring entrepreneurs and students.

Two-day Summer Symposium of AI Research

Society for Artificial Intelligence and Deep Learning (SAiDL) in association with Anuradha and Prashanth Palakurthi Centre for Artificial Intelligence Research (APPCAIR) organized a two-day Summer Symposium of AI Research on 25th – 26th July 2020. The symposium was attended by over 3000 participants from around the world.

The symposium aimed to expose undergraduate students to AI research by providing a platform that highlighted speakers from various areas. These technical talks, delivered by AI leaders, identified key areas pursued in modern AI research and enabled young, aspiring researchers to explore cutting-edge research directions. It also provided a plethora of topics to educate participants about the current advancements in Artificial Intelligence. This event also served as a forum for interaction between students pursuing similar career interests in AI. It aimed to make AI more accessible to everyone so that people can use it for the common good of our society. BITS faculty from the Department of Computer Science-Goa campus, Dr. Snehanshu Saha, Associate Professor and Senior Professor Dr. Ashwin Srinivasan were among the speakers' list.

Other speakers from the renowned universities and research institutes around the world included Manish Gupta, Director, Google AI Research, India, Jayashree Kalpathy-Cramer, Associate Professor, Harvard Medical School, Manik Varma, Principal Researcher at Microsoft Research India, Aleksandra Faust, Staff Research Scientist, Google Brain, CA, Vijay Janapa Reddi, Associate Professor, Harvard University, Carsen Stringer, Group Leader, The Stringer Lab, Howard Hughes Medical Institute Janelia Research Campus, Ross D. King, Turing fellow, Turing Institute, Hima Lakkaraju, Assistant Professor, Harvard University, Balaraman Ravindran, Professor, IIT Madras and Lovekesh Vig, Senior Scientist, TCS Research.

The student speakers were Yaman Kumar, Ph.D. student at MIDAS, IIIT-Delhi, Vikram Voleti, Ph.D. student at MILA, University of Montreal and Bhargav Srinivasa Desikan, Research Fellow at Knowledge Lab, University of Chicago.
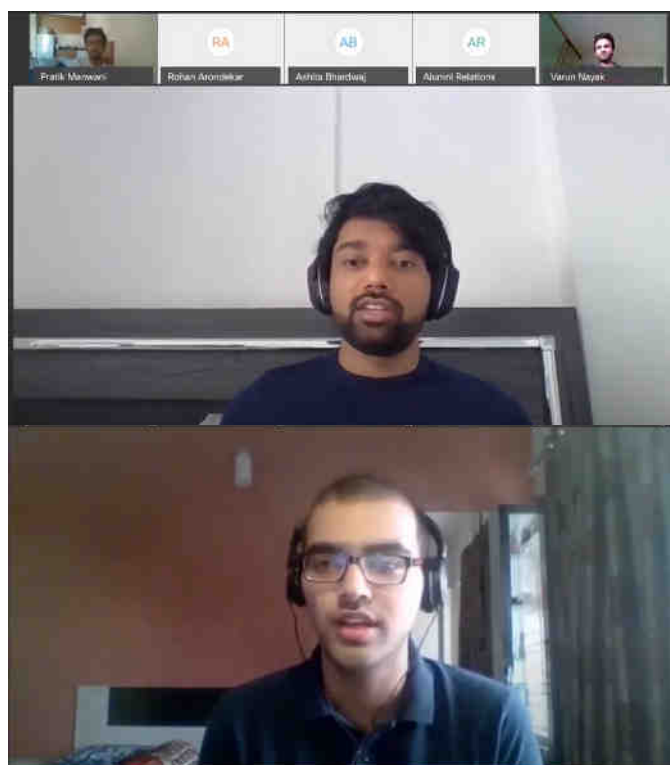
distinguished lectures

Sr. No.	Date	Title Of the Talk	Speaker's Name	Speaker's Designation / Affiliation	Organised by Department of
1.	7th Jan 2020	On Optimal Frames for Erasers	Prof. Ram N. Mohapatra	University of Central University, USA	Mathematics
2.	27th Jan 2020	Peptide Designs for Bioelectronics and Systems Chemistry of Peptide Networks	Prof. Nurit Ashkenasy and Prof. Gonen Ashkenasy	Ben Gurion University of the Negev, Israel	Chemistry
3.	30th Jan 2020	Convergence and Integration of Mathematics and Engineering (Optimal Control Systems)	Prof. D. Subbaram Naidu	University of Minnesota Duluth, USA	Mathematics
4.	4th Feb 2020	Bisynchronous Games	Dr. Mizanur Rahman	Assistant Professor, BITS Pilani K K Birla Goa Campus	Mathematics
5.	25th Feb 2020	Elucidation of Excited State Dynamics in Complex Systems	Prof. Anindya Datta	Professor, Department of Chemistry, Indian Institute of Technology Bombay	Chemistry
6.	25th Feb 2020	Planet Habitability via Modeling and Machine Learning	Prof. Snehanshu Saha	Associate Professor, BITS Pilani K K Birla Goa Campus	Department of CSIS and APPCAIR
7.	2nd March 2020	How to get your paper accepted in a good journal-An editor's viewpoint	Prof. Suresh C Pillai	Nanotechnology and Bio-Engineering Research Division, Faculty of Science, Institute of Technology Sligo, Ash Lane, Sligo, Ireland	Chemistry
8.	3rd March 2020	Normal Polarity Enantioselective Catalysis Using N-Heterocyclic Carbenes	Prof. David William Lupton	Monash University, Victoria, Australia	Chemistry
9.	11th March 2020	Safeguarding the Islamic Republic - Generational Shift and Structural Factors Shaping Tehran's Foreign Policy	Prof. Kingshuk Chatterjee	Department of History, Calcutta University	Humanities & Social Sciences
10.	6th March 2020	Normal Polarity Enantioselective Catalysis Using N-Heterocyclic Carbenes	Prof. David William Lupton	School of Chemistry, Monash University, Victoria 3800, Australia	Chemistry
11.	31st July 2020	Advancement in Packet Based Communications. Part - II	Dr. Amar Nath Ray	Founder ATT&C	EEE

alumni affairs

Talks by Alumni/Students On and Off Campus:

Apart from organizing 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 in the form of online webinars to enable the student community to benefit from the interactions held with the alumni. The following is a list of events conducted:

Sr.	Dates	Title of the Talk	Speaker(s)
1	11 Jan 2020	BITS2Civil Services	Mrs. Arushi Sharma
2	16 Jan 2020	1980 batch alumni interaction	Batch includes notable alumni such as Mr. Harish Bhat (Brand Custodian, Tata Sons), Mukul Khare (VP, Thysenkrupp India) and others
3	13 Feb 2020	BITS2Business School	Mr. Amrit Mann Mr. Ganesh S. Nagarsekar
4	30 May 2020	CATChamps	Mr. Kaushik Gaikwad Mr. Shubham Pandia
5	13 June 2020	BITS2MS/PhD	Mr. Abhijith Asok Mr. Varun Nayak Mr. Pratik Manwani
6	20 June 2020	BITS2GRE	Mr. Pragnesh Patel

BITSAA Global Meet (BGM) 2020
held from 17th - 19th January, 2020

Details on Page No. 3

Alumni Research Talks (ART)

The second edition of Alumni Research Talks (ART) was organized successfully on 15th February 2020. The event featured six eminent alumni of BITS Pi-

lani, who spoke about their journeys and their research interests followed by an interactive session. The event was graced by Director, Prof. G. Raghurama and Prof. Veeky Baths, Associate Dean of Alumni Relations Cell.

This year's edition of ART featured:

1. Prof. Y.N. Mohapatra, Professor of Physics and Materials Science, IIT Kanpur
2. Prof. Jugal Kishore Verma, Professor of Mathematics, IIT Bombay
3. Dr Shruthi Sridhar Vembar, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology, Bangalore
4. Prof. Subrat Kar, Professor & Head, SeNSE, IIT Delhi
5. Prof. Subramanian Yashonath, Professor of Solid State and Structural Chemistry Unit, IISc Bangalore
6. Prof. Patrick Das Gupta, Professor of Physics and Astrophysics, University of Delhi

Director's e-Party for the Graduating Class 2020

For every BITSian, Director's Tea Party is an event that holds a special place in their lives. It has always been a gathering which is full of emotions, memories, heavy hearts and a sense of achievement. This year, it was organized on 17th July 2020, not physically but virtually due to the COVID-19 pandemic. The class of 2020 was addressed by the Director of BITS Pilani K K Birla Goa Campus, Prof. G. Raghurama and The Associate Dean of Alumni Relations Cell, Prof. Veeky Baths along with Ms. Sukhnandan Vohra and Mr. Hari Menon, who appreciated the spirit of resilience of the batch of 2020 and wished them the best for they are the torch-bearers of BITS Pilani that will lead the future.

significant projects

SR.	Title of the Project	Principal Investigator / Co-investigator and Department	Funding Agency	Proposed/ Sanctioned amount (Rs. In Lakhs)
1	Modelling and Forecasting the Effects of Long Tern Interventions on COVID-19 using Network-based Approach	Dr. Anupama Sharma Mathematics	SERB- Matrics Special Call	5.50
2	Environmental Impact Assessment of MAT 2	Dr. Sampatrao Dagu Manjare Chemical Engineering	Deccan fine Chemicals (India) Pvt. Ltd	4.24
3	Ionic liquid -based forwarded osmosis desalination : A Bench Scale Study	Dr. Sampatrao Dagu Manjare Chemical Engineering	Procter and Gamble Health Limited	3.30
4	Biocompatible nano-vehicle mediated delivery of siRNA into stem cells for targeting Pulripotency markers as a Potential therapeutic approach in regenerative medicine	Dr. Meenal Kowshik Biological Sciences Co-PI:Dr. Indrani Talukdar Biological Sciences, Dr. Sutapa Roy Ramanan Chemical Engineering	CSIR	33.16
5	Climate Change Impact Assessment in Thiruvananthapuram Division Kerala	Dr. Rajiv Chaturvedi Humanities & Social Sciences	IORA Ecologicals, under The Forest-PLUS 2.0 program	4.81

SR.	Title of the Project	Principal Investigator / Co-investigator and Department	Funding Agency	Proposed/ Sanctioned amount (Rs. In Lakhs)
6	Undertaking study for mapping forest arears vulnerable to climate change in India based on high resolution computer model based projections	Dr. Rajiv Chaturvedi Humanities & Social Sciences	Forest Survey of India, Ministry of Env. Forest, Govt. of India	9.13
7	Study of efficacy of Quinacrine (QC) on inhibition of migration, proliferation, angiogenesis and Vesicle trafficking network of human non-small cell lung cancer cells.	Dr. Angshuman Sarkar Biological sciences	Goa Cancer Society	3.00
8	Co-digestion of STP Secondary Sludge with organic wastes in urban /peri-urban areas, process optimization, scale up and field demonstration	Dr. Srikanth Mutnuri Biological Sciences Dr. B Krishna Kumar, CSIR NIIST, Thiruvananthapuram Dr. P Ramna TERI Delhi Dr. P Venkateswara Rao NITW Telangana Mr. P Ganesh Kumar L & T Construction	DST	5.00
9	Fatigue Life Assessment Study	Dr. Vikas Chaudhari Mechanical Engineering Co-PI: Dr. Sachin Waigaonkar Mechanical Engineering	John Deere India Pvt. Ltd	5.90
10	Technical Vetting for 15KLD	Dr. Srikanth Mutnuri Biological Sciences	Tide Technocrats Private Limited	1.77
11	Implications of Ujjawala scheme for forest conservation efforts in the state of Jharkhand	Dr. Rajiv Kumar Chaturvedi Humanities & Social Sciences Co-PI: Dr. Mohan Kumar Bera Humanities & Social Sciences	Forest Department Government of Jharkhand	9.68
12	To submit projetto study impact of negative factors which effect the ecology of wetland and importance of monitoring natural wetland ecosystem	Dr. Srikanth Mutnuri Biological Sciences Co-PI: Dr. Rajiv Kumar Chaturvedi Humanities & Social Sciences	Forest Department, Government of Jharkhand	17.00
13	Image processing and machine learning techniques for leather species identification	Dr. A. Amalin Prince (Mentor)- EEE Ms. Anjli Varghese	TCS-RSP	25.34
14	Smart city data analytics in cloud	Dr. Neena Goveas CS&IS	ABB Global Industries & Services Pvt. Ltd.	4.54
15	Quantum information Technologies with Ion-trap and Optical -lattice devices	Dr. Radhika Vathsan Physics	DST -QUest (Quantum Technologies)	48.40

SR.	Title of the Project	Principal Investigator / Co-investigator and Department	Funding Agency	Proposed/ Sanctioned amount (Rs. In Lakhs)
16	MPSoC Based Automated Digital Signal Processing System for Tokamak Reflectometry	Dr. A. Amalin Prince EEE	BRNS	25.29
17	A Low Power Deep Spiking neural network for forest surveillance	Dr. Basabdatta Bhattacharya - CS&IS Co-PI: Sujith Thomas - CS&IS	SERB-CRG	31.47
18	Enzymatic pretreatment for enhancing anaerobic co-digestion of sewage sludge/ septage/Food waste/MSW for energy production	Dr. Srikanth Mutnuri Biological Sciences	Larsen and Toubro Limited, Chennai	12.39
19	Empowered Septic tank as a decentralized wastewater treatment system	Dr. Srikanth Mutnuri Biological Sciences, Prof. Korneel Rabaey Ghent University	DBT- BIRAC	151.92
20	Targeting the amyloid matrix of staphylococcal biofilms for effective management of its recalcitrant infections	Dr. Nikita Admane Dr. Sumit Biswas (Mentor)	ICMR-DHR	47.35
21	Integrated Track in Brain and Cognitive Science (iBRAIN)	Dr. Veeky Baths Biological Sciences	Erasmus Programme	120.00
22	Life cycle Assessment (LCA) for synthetic organic chemicals factory for manufacture of Dyes, Dye-/ Intermediates & reactive Dyes	Dr. Sampatrao Dagu Manjare Chemical Engineering	Shree Pushkar Chemicals & Fertilizers Ltd	1.29
23	Studies on hybrid Pressure Retarded Osmosis (PRO) – Reverse Osmosis (RO) system for energy generation utilizing hypersaline RO reject stream	Dr. Anirban Roy Chemical Engineering	SERB-CRG	36.30
24	Performance assessment of MTB & Oxa production process	Dr. S D Manjare Chemical Engineering	Deccan Fine Chemicals (India) Pvt Ltd	4.01
25	Performance Assessment of 2,4,6-trichloroaniline (TCAN) production process	Dr. S D Manjare Chemical Engineering	Deccan Fine Chemicals (India) Pvt Ltd	4.01
26	Studies on CO fuelled self-sustaining Unmixed Combustion (UMC) reactor for integrated CO_2 capture and power/steam generation	Dr. Srinivas Krishnaswamy Chemical Engineering Co-PI: Dr. Amol Deshpande Chemical Engineering	DST	78.61

SR.	Title of the Project	Principal Investigator / Co-investigator and Department	Funding Agency	Proposed/ Sanctioned amount (Rs. In Lakhs)
27	Numerical approximation of Optimal Problems using Virtual Element Method	Dr. Anil Kumar Mathematics Co-PI: Prof. Sarvesh Kumar IIST, Valiamala Thiruvananthapuram	SERB-CRG	19.07
28	1981 Batch Chair Professorship	Dr. Ashwin Srinivasan CS&IS	1981 Batch Chair Professorship	1.80
29	Feacal Sludge Lab at Goa	Dr. Srikanth Mutnuri Biological Sciences	1966 -1971 BITS Alumni Batch	50.59
30	Doxorubicin loaded pegylated gold nano particles synthesis and to test chemoradiation potentials as drug delivery system and radiosensitizer for old squamous cancer cell line	Dr. Shameer Ahmed. Dr. Vijayashree Nayak (Mentor) Biological Sciences	Goa Cancer Society	6.00
31	Polyamines and their involvement in GnRH I regulation and their role in Polycystic ovarian syndrome (PCOS)	Dr. Arnab Banerjee Co-PI: Dr. Raviprasad Aduri Biological Sciences	DBT	63.00

enriching the learning experience
visits by faculty

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

Prof. Amalin Prince A, Department of Electrical and Electronics Engineering, delivered an invited talk on 'Tuning Voltage Setup and Data Processing for FMCW Reflectometer' during the National Symposium for Commemorating 30-years of ADITYA Tokamak, organised by Institute for Plasma Research (IPR) Gandhinagar, Department of Atomic Energy (DAE), Government of India at Entrepreneurship Development Institute (EDI) of India, Gandhinagar, Gujarat, on 28th January 2020.

Dr. Amol Deshpande, Department of Chemical Engineering, delivered an invited Talk in webinar mode, on 'Using Simulation Applications for Teaching' organized by COMSOL Multiphysics Pvt. Ltd., Bengaluru, India on 16th June 2020.

Prof. K A Geetha, Department of Humanities and Social Sciences delivered an invited talk on "Gendering Caste: A Study of Dalit Women" at an Online Faculty Development program on Gender Sensitization organized by BBTMC College, West Bengal, July 2020.

Prof. K A Geetha, Department of Humanities and Social Sciences presented a paper titled "A Study of Caste and Social Hierarchy within the Devadasi System" at the 6th World Conference organized by TIIKM and Bridge Water State University in a Webinar, July 2020.

Prof. Lakshmi Subramanian, Department of Humanities and Social Sciences coordinated an international seminar on 'Technologies of Trust' organized by Institute of Advanced Studies Nantes, Indo-European Advanced Research Network and Godrej archives in Mumbai from 8-10 January 2020.

Prof. Lakshmi Subramanian's book 'Singing Gandhi's India: Music and Sonic Nationalism' published by Roli Books was launched and a seminar on Gandhi was organized by Roli Books and Tata Literary Trust in Mumbai 4-5 February 2020.

Prof. **Lakshmi Subramanian** participated in an international seminar organized by Victoria Memorial, Kolkata on Gandhi and Sonic Nationalism.

Prof. **Lakshmi Subramanian** participated in a Conversation series, held on 27th of June-2020, organized by Ahmedabad University on the Future of Business History.

Prof. **Lakshmi Subramanian** delivered an invited talk on Creative pasts: why teach history, at IIT Goa on 10th August 2020.

Dr. Pramila Jakhar, Department of Electrical & Electronics Engineering, delivered an invited talk in FDP course on "Next-Generation Semiconductor Devices for high-end applications" (21st-27th June 2020) organized by NIT Patna in association with Electronics & ICT Academy and sponsored by: Minister of Electronics and Information Technology, Govt. of India.

Prof. Rajesh Mehrotra, Department of Biological Sciences delivered an invited talk in on 'ACGT cis regulatory elements in Plant gene expression: A comparative Genomics perspectives' at UGC SAP National Seminar, New Vistas in Botany at Goa University on 14th February 2020.

Prof. Snehanshu Saha, Department of CS&IS delivered a talk titled 'Ant taxi to Pie Passenger-Distributed Ride strategies' at the 12th International Conference on COMmunication Systems & NETworkS (COMSNETS) held at Bangalore on 7th January 2020.

Prof. Snehanshu Saha delivered an invited talk on 'Parsimony Computing: Non-tuning methods in Neural Nets' at the University of Tehran, Iran, on 12th January 2020.

Prof. Snehanshu Saha delivered an invited talk on 'Research and Industry Perspective on Data Science, for IEEE Computer Society, Bangalore Chapter on 8th May 2020.

Prof. Snehanshu Saha delivered an invited talk on 'AdaSwarm: Optimization in ML' for Nitte Institute of Technology, Bangalore on 1st June 2020.

Prof. Snehanshu Saha delivered an invited talk on 'From small data to Big Data: Evolution if AI Techniques: NIAS, Bangalore on 16th July 2020.

Dr. Vivek Rangarajan, Department of Chemical Engineering, was an **"Eminent Speaker"** in the e-Faculty Development Program (FDP) cum Workshop on "WASTE TO BIOENERGY" organized by Department of Life Sciences, School of Basic Sciences and Research, Sharda University, Uttar Pradesh and Department of Agricultural Engineering, Maharashtra Institute of Technology Aurangabad held from 28th June to 4th July, 2020

faculty achievements

Epione Swajal Solutions (a startup by **Dr. Anirban Roy**, Assistant Professor, Department of Chemical Engineering) and **Mr. Anupam Mukherjee** (pursuing PhD under Dr. Anirban Roy's guidance) won the BRIC Idea Exposition on "Healthcare & Environment" organized by BIRAC Regional Innovation Centre in collaboration with IKP and Goa Institute of Management (GIM) held at GIM on 21 & 22 February 2020.

Prof. Lakshmi Subramanian, Department of Humanities and Social Sciences has been recognized for her expertise in maritime history, and has been invited by the University of Leiden to conduct a master classes tentatively scheduled in June 2021.

Prof. Lakshmi Subramanian, has been invited to write for Observer Research Foundation on Covid 19 from a historical perspective. She has also been approached by Palgrave to assist in the writing of a new economic history of India. Her book 'The Sovereign and the Pirate' (O.U.P., 2016) was selected by the New Books Network, New York to initiate a discussion.

Prof. Reena Cheruvalath, Department of Humanities and Social Sciences, along with I Manalo and H Ayabe, presented a poster, entitled as "Planning as a metacognitive strategy, diagram use, and depth of moral reasoning" at EARLI SIGs 8 and 16-Dresden 2020 in DGUV Congress, Dresden, Germany.

Prof. Snehanshu Saha, Department of CS&IS, was the recipient for the "Outstanding Paper Award" at the 12th International Conference on COMmunication Systems & NETworkS (COMSNETS) held at Bangalore on 7th January 2020.

Dr. Anirban Roy, Assistant Professor, Department of Chemical Engineering, co-authored a book on "Modeling in Membranes and Membrane-Based Processes" (Wiley publishing house).

Prof. Dipankar Pal presented a research paper, co-authored with BITS Goa scholars, Mr. Akhilesh G. Naik and Mr. Debarshi Deka, titled, "ASIC Implementation of High-Speed Adaptive Recursive Karatsuba Multiplier with Square-Root-Carry-Select-Adder" in the 11th LASCAS 2020- a signature conference of IEEE CAS, on 26th of February, in San Jose, Costa Rica.

student achievements

Prajakta Bhende, PhD scholar from the Department of Biological Sciences, working under the supervision of Dr Anasuya Ganguly and Dr Judith Braganca, had won a paid research internship to work in Cardiff University, UK with Dr Polina Prokopovich, School of Pharmacy for a few months. Due to the covid-19 ourbreak she will travel to UK at a later date. Her topic of research was to make novel scaffolds out of PHA. Prajakta Bhende also helped in testing Covid-19 patient samples at GMC, Goa.

Sheetal Thomas, a PhD scholar of Department of Economics along with Mridula Goel and Dipak Agrawal (2020) co-authored "A framework for analyzing financial behavior using machine learning classification of personality through handwriting analysis" Journal of Behavioral and Experimental Finance, Elsevier, Vol. 26, June 2020, 100315, DOI:10.1016/j.jbef.2020.100315 (Scopus, ABDC Grade "A" Journal, Quartile-1)

A research scholar, **Kasi Bandla,** working under the guidance of Prof. Dipankar Pal presented a paper,

titled, "Design of Low Power, High Speed, Low Offset and Area Efficient Dynamic-Latch Comparator for SAR-ADC", in the IEEE 2020 International Conference on Innovative Trends in Communication and Computer Engineering (ITCE 2020) in Aswan, Egypt, on 08 February 2020. The paper was jointly authored along with Mr. A. Harikrishnan and Prof. Dipankar Pal.

A paper titled "Outage Analysis of OFDMA Based NOMA Aided Full-Duplex Cooperative D2D System", authored by **R. Bajpai** (2019PHXF0003G), **A Kulkarni** (2017A3PS0901G), **G. Malhotra** (2017A8PS0512G), **N. Gupta** (Faculty), has been accepted for an International Conference on Telecommunications, scheduled to be held at Indonesia on 5th to 7th October 2020.

During Practice School-II with UST Global, team BITSIAN_HACKERS consisting of **Ravi Sadhwani** (2016A8PS0302G) along with other three students of Pilani Campus viz. Teertha Raj Chatterjee, Kartik Nawal, and Abhinay Pande participated in D3 Code Pursuit Hackathon 2019. They showcased the work in D3 Global Summit in December. The team won Runners Up position amongst 440+ teams globally. Each one was awarded Samsung Note 9 as prizes for the same. They have also filed a patent in association with UST for the same algorithm designed.

Aditya Choudhary (2017A7PS0041G) along with 5 students from different colleges grouped randomly as a team won the Code For Good 2020 Hackathon. It was the 1st virtual and the biggest Code For Good event till date where 40 teams competed with each

other.

CFG is a hackathon for social good organisations. Here, students work alongside employees of JPMC to develop technical solutions for NPO's to tackle real world problems. From 23rd July, over the span of 3 days, Aditya's team developed a solution for **Janaagraha Centre for Citizenship and Democracy** which is working to develop a platform that enables citizens to report societal problems to the public authority.

In the 48 hours, they developed a solution for citizens to register complaints about civic conditions with simple interactions through WhatsApp & SMS. Interaction through WhatsApp was processed to extract information on issue and location through ML which can be accessible to NPO through a dashboard. Each member of the team was awarded an Apple iPad worth about Rs. 1.8 Lakh.

In January 2020, Project Kratos a twenty five student team with **Akash Chaudhary** as Team Lead was selected to participate in the finals of the Indian Rover Challenge, held at Vellore Institute of Technology, Chennai. The competition was conducted from 17th to 19th January, and 4 different challenges were conducted to assess all aspects of the Mars Rover: Extreme Retrieval Task, Equipment Service Task, Astronaut Assistance Task and Life Detection Task.

There were 21 teams in finals, from colleges all across the world. Project Kratos stood 10th amongst all participatory teams, and also attained first rank amongst all newly participating rovers.

Project Sivaar of Enactus BITS Goa led by **Naman Gupta** and **Yash Agarwal**: Out of 107 innovative projects from 20 countries, the project has been selected in the Top 24 projects worldwide and will be going to the final round of incubation & mentorship. The team of 15 students participated in Enactus 1 Race 4 Oceans. Project Sivaar aims to tackle the problem of ocean acidification, marine habitat loss and climate change through the creation of sustainable and innovative ocean farms and seaweed cultivation while creating micro-social entrepreneurs out of underprivileged communities and farmers around Goa. The Team has partnered with organisations like TERI & NIO for this endeavour and is mentored by

Prof. Mridula Goel. The team will also be representative of the Ocean Student Advisory Group for Impact 4 Oceans during UN Global Goals Week.

Team InfinityBox has won the World Regionals of HULT Prize 2020 and is one among the Top 50 start-ups worldwide who will attend the accelerator at Boston and aim for the $1 Million Prize. InfinityBox is a team of IIT KGP and BITS Pilani students solving the challenge of rising usage of single-use plastics by following a circular economy model for food delivery containers. BITS Goa student **Shiv Kumar** along with 3 IIT Kharagpur students namely - Shashwat Gangwal, Soham Chandorkar and Keshav Godala constitute Team InfinityBox.

Across three pilots in Kharagpur, Gurugram and Mumbai, they have had an outstanding adoption rate of 75% among the consumers. The latest Mumbai pilot was in partnership with Swiggy. The team is looking at replicating this success and have a bigger impact alongside Swiggy. Once operational, InfinityBox would reduce at least 200,000 Kgs of plastic within 2 years.

Read more about InfinityBox at https://www.infinityboxkgp.com/

Suraj Gupta (2017B2A30329G), **Ashutosh Vashist** (2017A1PS0892G), **Kushal Rathi** (2018A3PS0508G) represented India as team "Changemakers" in the Hult Prize Global Regional Finals at Dhaka, Bangladesh(virtually) and secured a position in the Top 50 globally.

It is organized by Hult International Business School, conducted in March 2020. The Hult Prize is an annual, year-long competition that crowd-sources ideas from MBA and college students to solve a pressing social issue such as food security, water access, energy, and education.

They developed a solution, "PiezoRun," to recover waste heat energy from road transportation to tackle the everlasting energy problems.

Five students of BITS Goa Campus, **Suraj Gupta** (2017B2A30329G), **Ashutosh Vashist** (2017A1PS0892G), **Aditya Ketkar** (2016A7PS0081G), **Vishnu Nair** (2017A1PS0800G) and **Ishan Sharma**

(2019A3PS0297G), along with one student of Hyderabad Campus, Ishita Kukreti (2017A1PS1037G) participated in the Hack the Crisis – India, an Online Hackathon. This hackathon was organized by Garage48, 'Hack A Cause – India', and 'Ficci Ladies Organization Pune' and supported by the Ministry of Electronics & Information Technology, Government of India (MEITY). The hackathon is part of a global initiative, and their team, "PharmBox," was selected in the Top 30 out of more than 3000 teams (15000+ participants) from all over India in the competition held on 3-5 April 2020. They developed a medicine vending machine system to tackle the problem of medicine procurement in India.

Link to the concept video: https://www.youtube.com/watch?v=xAxU0pfQJx8&feature=youtu.be

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Three students of Goa Campus namely **Shiv Kumar** (2017B3A10585G), **Mayank Phadke** (2017B3A80625G) and **Ishita Srivastava** (2016A8PS0236G), have made it to the prestigious list of Economic Times Campus Stars Class of 2019-20. The third edition of ET Campus Stars was launched in September 2019. It was a four-phase program participated by 49,000+ students from 2000+ colleges out of which 104 students nationwide were selected for this list.

The full list is available here: https://economictimes.indiatimes.com/etcampusstars

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The Goa round of the 16th edition of the Tata Crucible Campus Quiz, a national level quiz competition held at BITS Pilani, K K Birla Goa Campus on the 16th February 2020, kicked off with a quick preliminary written round that saw two teams from BITS Pilani Goa Campus (One: **Lucky Kaul** and **Shiv Kumar**, Two: **Navneet Raghunath** and **Ratnakant Govenkar**) become a part of the top six teams for the on-stage final, out of a 114 teams.

The audience was enthralled by an entertaining 45 minute final that was hosted by quizmaster Giri 'Pickbrain' Balasubramaniam, that saw a dominative performance from Lucky and Shiv, who went on to defend the title they had won in 2019.

The Director of BITS Goa, Prof. Raghurama G felicitated the winners with a cash prize of INR 75000. The runners up were felicitated with a cash prize of

INR 35000.

Sharad Chitlangia (2017A8PS0472G), a student of Department of Electrical and Electronics Engineering has won funding support of 10,000 USD (Rs. 7.64 lakhs) provided by Microsoft Research's Reinforcement Learning Open Source Festival. This year only 6 students were selected globally.

The Reinforcement Learning (RL) Open Source Fest is a global online program focused on introducing students to open source reinforcement learning programs and software development while working alongside researchers, data scientists, and engineers on the Real World Reinforcement Learning team at Microsoft Research NYC. Students work on a four-month research programming project during their break from university (May-August 2020).

Please find more information at this link: https://www.microsoft.com/en-us/research/academic-program/rl-open-source-fest/

Ayushi Dubal (2019A7PS0099G), a first year student of Department of Computer Science and Information Systems has been selected for a scholarship of Google's 2020 APAC Women Techmakers Scholars Program.

Through the Women Techmakers Scholars Program, Google is furthering Dr. Anita Borg's vision of creating gender equality in the tech industry by encouraging women to excel as active participants and leaders in the field. The scholarship is awarded based on academic performance, leadership, and impact on the community of women in tech. Ms. Ayushi cleared three rounds of selection - a written essay round, the Google Online Challenge, and a telephonic interview, to be selected as one of 74 scholars from all across India and Greater China.

Scholarship includes a cash scholarship of 1000 USD, and an invitation to a virtual retreat organised for the scholars, which had multiple workshops and sessions that boosted personal and professional growth.

Alish Dipani (2016A7TS0005G), was selected for a grant by The Ruby Association for his project titled Rubyplot: An advanced plotting library for Ruby.

He was one of the five recipients with applicants from all around the world; the grant amount was JPY 500,000 for the period from November 2019 to March 2020. This was an extension of his Google Summer of Code (GSoC) 2019 project under The Ruby Science Foundation.

Google Summer of Code is a global program focused on introducing students to open source software development. Since its inception in 2005, the program has brought together 15,000+ student participants and 12,000 mentors from over 118 countries worldwide. This year, Google has funded 1195 student projects for 199 open source organizations who benefit from active involvement from new developers. **Samesh Lakhotia's** (2018AAPS0553G) proposal for Google Summer of Code 2020 has been accepted. He will be working with HydraEcosystem.org on his project, https://summerofcode.withgoogle.com/projects/#6296902657638400
Devansh Aggarwal's (2018A7PS0131G) proposal for Google Summer of Code 2020 has been accepted. He will be working with The Mifos Initiative on his project, https://summerofcode.withgoogle.com/projects/#5282825042919424
Varun Bankar (2018B2A70295G) proposal for Google Summer of Code 2020 was selected by CERN-HSF organization. The topic of his summer project is 'Implementation of Graphical User Interface for Ganga' https://summerofcode.withgoogle.com/projects/#5614117127192576

Alish Dipani (2016A7TS0005G) and **Mehul Rastogi** (2016A7TS0087G) were selected as Teaching Assistants for an international online computational neuroscience summer school Neuromatch Academy held from 13th to 31st July.

Rachit Rastogi's (2016B3A80358G) research paper titled 'Renewable energy firm's performance analysis using machine learning approach' was accepted for the conference "SEIT 2020, The 10th International Conference on Sustainable Energy Information Technology" to be organized in Leuven, Belgium. The paper got published in Procedia Computer Science journal by the Elsevier publications. This paper was co-authored by Dr. Ritika Jaiswal (Department of Economics, BITS Goa) and Dr. Raj K Jaiswal (Department of Computer Science, BITS Goa) who mentored and guided him throughout the process.

Tanmay Dixit (2016B2A30593G), along with Prof. Mridula Goel Priyesh Srivastava, Hariram Ramakrishnan and Rajath Reghunath co-authored an IEEE paper entitled "Cloud-based Mobile and Web application to support managing the treatment of Tuberculosis" which was published in COMSNETS 2020 (International Conference on COMmunication Systems & NETworkS) and can be accessed here https://ieeexplore.ieee.org/abstract/document/9027426/ . The nature of tuberculosis, a serious chronic disease, requires regular, continuous drug-based treatment, periodic diagnostic monitoring for serious side effects on liver function and proper supportive dietary nutrition. The app is developed to be very simple and explicit for patients to feed their data and the web interface is to optimize doctor's time in following up on the treatment of the case. Use of the app is expected to solve problems related to the administration of TB treatment, like migration, infectiveness for health and care providers etc. The research paper won the best paper award at the NetHealth Workshop on January 11, 2020 in Bangalore.

Snigdha Tiwari (2019A8PS0555G), designed a website for Tehsil Dadri (www.tehsildadri.com) , on a pro bono basis in July 2020 so that people and employees of the tehsil get all the information on one platform. It is regularly updated with the coronavirus pandemic information, public orders and press releases.

Uma Matlani (2018H1290017G), a student of M.E. Biotechnology was selected for the Khorana Program for Scholars 2019 to work under the mentorship of Dr. David R Andes, of University of Wisconsin-Madison, USA during the summer vacations (29th May to 3rd August 2019). The program is jointly supported by Department of Biotechnology, Govt. of India, Indo-U.S. Science and Technology Forum (IUSSTF) and WINStep Forward.

The program includes travel expenses, stipend, stay, and health insurance of the selected student.

Ashutosh Vashist (2017A1PS0892G) was selected to participate in the MIT Africa Takes on COVID-19 Hackathon (https://covid19challenge.mit.edu/africa-takes-on-covid19/), a hackathon organized by MIT students from May 1-3, 2020. The objective of the Hackathon was to encourage innovations to tackle COVID19 in Africa. Ashutosh was amongst 350 participants selected from a diverse pool of more than 2500 international applicants from over 100 countries. He was chosen to be a participant in Track E. Sustaining Primary Care During COVID-19, comprising of participants from worldwide cross-functional teams.

The Hackathon required the teams to build a product prototype in 48 hours, make suitable business and financial models for a potential scale-up.

Ashutosh led the team, "Lifeline", communicated across different time zones to manage and offered his analytical and product development skills. The team was amongst the Top 20 in the Hackathon.
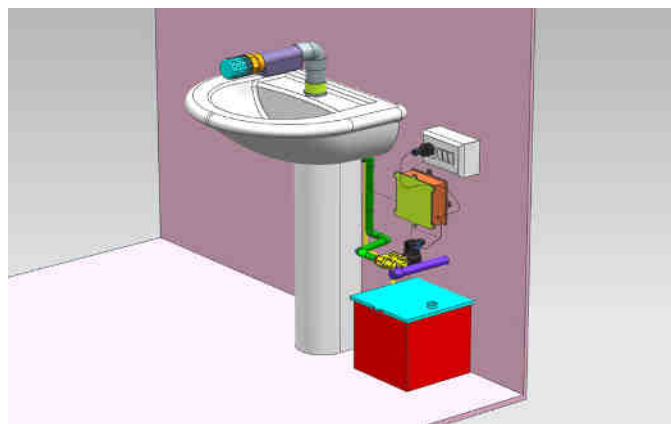

Ashutosh Vashist (2017A1PS0892G) was selected as a Delegate to participate in the prestigious 2020 Harvard College Project for Asian and International Relations (HPAIR) Harvard College Conference (https://hpair.org/harvard-conference-2020), in Cambridge, Massachusetts, the USA from 14th to 17th February 2020. It is the largest international student-organized conference in the world. This year's theme was Striking a balance: Vision of a Conflicted World. Ashutosh was amongst 300 delegates selected from a diverse pool of about 4000 international applicants from around 80 countries. He was chosen to be a participant of the Stride Funding Impact Challenge, comprising of delegates in global cross-func-

tional teams.

The Impact Challenge required the team to provide a comprehensive review concerning the target audience of the upcoming startup and list out relevant marketing channels for their campaign.

Ashutosh led the team, collaborated with the take of the relevant stakeholders and gave the final pitch. His pitch was deemed amongst the best by the judges of the Impact Challenge.

Shrishailya A Agashe (2019A7PS0004G) has filed a patent for a project titled 'Contactless Sanitation System' in the Indian Patent Office. Shrishailya has invented an attachable system for contactless sanitation of the hand and feet which is specially designed and prototyped for the current COVID-19 pandemic situation, wherein contactless hand/ feet washing is an absolute need. Another unique point of the project is that the user are not needed to replace the existing hand washing basins/ stations, since an external attachment is provided for making the process of hand and feet washing contactless and completely automated.

student events

CEL PROGRAMMES

Center for Entrepreneurial Leadership (CEL) is an independent society at BITS Pilani, Goa Campus, bridging the gap between Entrepreneurship and Innovation. Through mentorship, teaching, conducting highly competitive activities and funding select

startups, CEL ensures that the next-gen entrepreneurs are able to maintain a highly productive environment to incubate budding talent to make it to the top with the motto: Inspire. Ideate. Innovate.

Events associated with BITSAA Global Meet (BGM) 2020 – BITS Spark

CEL BITS Goa organised three events in association with BITS Spark as a part of the BITS Spark track at BITS Pilani K.K. Birla Goa campus at BITSAA Global Meet (BGM) 2020. BITS Spark is a BITS Pilani Angel Investment network under BITSAA International, with a purpose to produce and create amazing BITSian Startups and entrepreneurs. The event was organised in three parts, namely, BITS Spark Stars Panel, BITS Spark Cohort Pitches and Entrepreneur-Mentor Speed Dating.

BITS Spark Stars Panel

The first was the BITS Spark Stars panel. It mainly focused on aspects of fundraising, profitability, founder dynamics and how the BITS Pilani network played a crucial role in their venture journeys. The panel consisted of Shivkumar Ganeshan (Co-founder, Exotel), Vijay Sharma (Co-Founder, Belong.co), Nishith Rastogi (Co-Founder, Locus.sh) and Payal Tandon (Co-Founder, e-GMAT). The panel was moderated by Sundi Natarajan (Co-Founder, Sparksoft & Angel Investor).

In founder Dynamics, Vijay and shivku talked about their choices at Exotel, how trust is important in startups to work and the importance of right communication. Payal, from E-Gmat, talked about how positioning themselves in markets and innovating using technology helped them make inroads in competitive markets. Nishith discussed how he sat for 4 hours during his meetup with investors and how important seed-funding valuation is in a startup. All of these were accompanied by humorous tales of their own journeys. The session closed with Sundi summarising their journeys and takeaways for the aspiring founders.

BITS Spark Cohort Pitches Investment Round 10

BITS Spark in order to kickstart its 10 Investment round held an exclusive cohort pitch at BITSAA Global Meet (BGM) 2020. The event started with BITS Spark lead, Rahul Seth who threw some light on BITS Spark's portfolio and exits and gave more info on Investment Round 10 which is to be held next month. 8 startups were invited to pitch at the event through a highly selective application process. The event was judged by a highly esteemed panel consisting of Payal Tandon(Co-Founder e-GMAT), Vijay Sharma(Co-Founder, Belong.co), Shivkumar (Co-Founder, Exotel), Sundi (Co-Founder, Softspark corporation), Preetish Nijhawan (Cervin Ventures), Nishith Rastogi (Co-Founder, Locus.sh), Phanindra Sama(Founder, Redbus), Prem Jain (Co-Founder, Persando Systems), Amit Khetan (Director, Cisco) and Jayan Ramankutty (Director, Essmart).

After 3-minutes pitching by each startup, the win-

ners were First prize: Xefyr, Second prize: YourPhysio, Third prize: Elixar Systems. In addition, the Most sustainable startup award: Agrifortell and Most popular startup award (by Audience) went to Infinity Box.

BITS Spark Entrepreneur-Mentor Speed Dating

In order to nurture Ideation stage startups and continue its core vision of making BITS one of the top entrepreneurial hubs, BITS Spark held an exclusive entrepreneur-mentor speed dating at BGM 2020.
A total of 14 Startups were mentored in a session of an hour with mentors being Investors/VCs and founders.

The organising team gained insights from the CEL networking dinner with Sriharsha Majety Moonshot session with Rahul Chandra (Helion Ventures) (Swiggy CEO) & Hari Menon (Big Basket CEO) & Phanindra Sama (Founder, Redbus)

CEL exclusive town hall Session with BITSian Founders/Investors

CEL BITS Goa had an exclusive interactive town hall session for the members, sharing insights on BITSian startups and Venture Capitalists ecosystem, which was followed by an AMA(Ask me Anything) session at BITSAA Global Meet 2020. Held on 18th January (Saturday), the panel consisted of marquee BITSian founders and investors:-
1) Sanjay Nath (Co-Founder and Managing Partner,

Blume Ventures)
2) Nishith Rastogi (Founder and CEO, Locus)
3) Shashank Murali (Co-Founder and CEO, TapChief)
4) Anirvan Chowdhury (Investment Team, Blume Ventures)
5) Govinda Upadhyaya (CEO, LEDsafari)

Moderated by Yash Agarwal (President, CEL), the session started with the topic of fundraising with some light thrown on the dark side of valuations and seed investments. It was followed by some insights on the BITSian startup ecosystem and finding a suitable co-founder. The panel further discussed how BITS Pilani played a crucial role in shaping their entrepreneurial and investment career. The role of BITSian VCs and how the VCs in India gain from collective investment was further discussed. The session ended with questions from aspiring founders on the problem faced in their own startups and how they should strategize further on their career journeys.
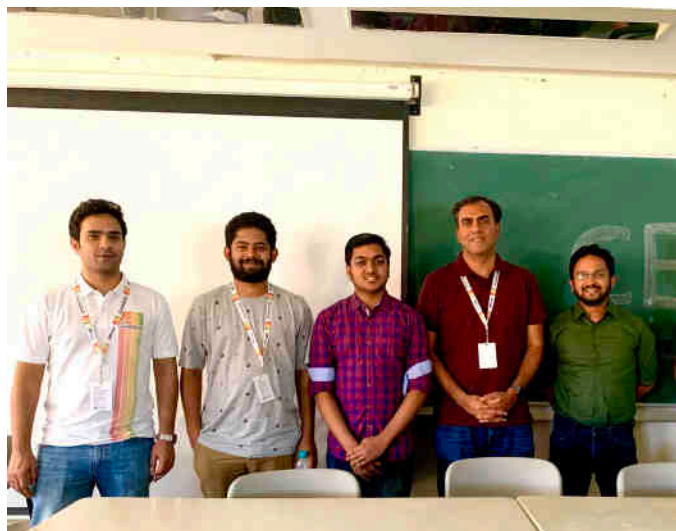
Lecture Series

A lecture on using LinkedIn was conducted where use of the platform to grab various opportunities was

discussed. LinkedIn allows members (both workers and employers) to create profiles and "connections"

with each other in an online social network which may represent real-world professional relationships. A lecture on various rounds of investing was also conducted. A full touch up of investing, Venture Capitalists and Angel Investors was discussed.

CEL Accelerators

Provides mentorship with industry experts to campus startups and connected them with investors which allowed them deeper insight into their field of operations. It also provided a forum to discuss new ideas and their viability with respect to the market.

Workshops and Webinars

In order to inculcate the spirit of entrepreneurship and teach people about various aspects of Startups, CEL conducted the following webinars:

● 'Kickstarting your entrepreneurial journey' workshop by Razi Abbas where he discussed various phases of startups.

● Personal Finance webinar session was conducted by Gaurang Sanghvi. Gaurang heads Online Business for DSP Mutual Fund & has over15 years of experience in FinTech, Consulting & Venture Capital. He taught the basics of how to save and manage the money.

● A Marketing 101 webinar was organized where participants got the chance to learn the basics of product marketing from Nikita Bharadia (BITS Goa alumnus) - Product Marketing Manager at Google. She has 6+ years of experience working at In-

tel, Unilever, and is currently with Google where she works on transforming education at scale.

● Product talks: a webinar was conducted by Amrit Pal, a 2009 BITS Goa alumni and is the WhatsApp Product Head at Facebook Inc. where he is leading the WhatsApp Business product. He started his journey at a startup in sub-Saharan Africa and scaled the FinTech product to the masses. He then moved to Square Inc. which was started by the Twitter founder, Jack Dorsey, where he led the Products division. He is also a fellow at FinTech Research Institute at the University of California and Product School, San Francisco. Besides this, he has also been instrumental in nurturing the entrepreneurship culture on campus as an ex-CEL member.

● A talk was given by Abhinav Asthana (BITS Goa '06) where he shared his experiences and answered questions of the participants. He is the co-founder and CEO of Postman, an API development platform used by millions of developers across the globe. His startup is valued over 250 million and is used by over 10 million+ developers and over 500K+ companies worldwide including Microsoft, Twitter, Paypal, Shopify, etc. He started BITS360 as a side project out of his hostel room, which became a phenomenal success and later started Postman right after graduating from college.

● A webinar on Venture Capitalist was conducted by Kushal Bhagia (BITS Goa '08). He is the Founder and CEO of FirstCheque, an early-stage VC firm that has funded 30+ startups. He founded NayiDisha studios - A startup building motion-based educational games for kindergartners used by 100,000+ kids while at BITS Goa. He successfully sold it in 2015 and was also part of the UpGrad's early team.

NIRMAAN ACTIVITIES

1) COVID RELIEF INITIATIVE

Nirmaan - Goa Chapter together with community members at BITS Pilani, KK Birla Goa Campus launched an initiative, to help migrant workers and other labourers in Zuarinagar. The initiative has been able to provide dry grocery packs to more than 500 families. They also helped many labourers by

providing access to cooked food and dry rations provided by the government. Faculty members who are part of the initiative helped more than 100 migrant labourers register for travel on Shramik trains and many are also being provided a small sum to support them through the journey. They had collaborated with the Primary Health Centre at Cansaulim (which covers the Zuarinagar area) in training trainers to raise awareness and bring about behavioural changes to reduce the spread of COVID-19.

2) PROTSAHAN

Protsahan started with the aim to ensure that no one misses out to reward merit and to uplift the underprivileged and to make a move towards an equal society. The team has planned to identify and enable talented and capable students, to complete their aspirations of higher education though good institutes. The team has conducted more than 1200 scholarship tests across various Government and private schools.

3) INITIATIVE UNNATI

Amidst the Covid-19 situation where all schools were closed, Nirmaan-Goa Chapter took the opportunity to improve English Communication skills of the kids residing in Zari, Lamani and Birla. More than 40 volunteers participated in this 2-week long initiative to teach 20+ students. The volunteers taught these kids through the means of phone call and followed a standard curriculum. The curriculum consisted of communication situations which a person faces in the outside world. The dedicated volunteers spent almost an hour daily teaching these kids. Towards the end, remarkable changes were observed and the kids' parents were really impressed with the outcome.

4) UDAAN

On 15th of February, the volunteers of Nirmaan Goa successfully organised Udaan in association with Spree - the sports festival of BITS Pilani Goa Campus. Udaan is a sports festival for differently abled children across various schools in Goa. This was the fourth edition of Udaan since its inception in 2017. The event was organised for students with physical and mental disabilities. Udaan 2020 witnessed participation of over 80 students from various differ-

ent schools from Goa. It was held in collaboration with Special Olympics Association Bharat - Goa and Paralympics Association Of Goa.

5) I-RUN MARATHON

On the morning of 12th January, I-Help Foundation conducted the third edition of their annual marathon: I-Run For A Cause. The volunteers of Nirmaan Organization helped arrange this event successfully.

6) REPUBLIC DAY

A fun filled evening in which 40 children from Lamani were hosted as a part of Republic Day Celebration. The event was done in collaboration with Abhigyaan.

7) MENSTRUAL AWARENESS SESSIONS AND HEALTH CAMPS

In January, a Menstrual awareness session was held in Zari. The session was done in both Hindi and Kannada and 35 women showed up. Later in January, one more menstrual awareness session was conducted in collaboration with the Samriddhi Sharma Foundation for over 50 teenagers of Government High School, Zari. In February, the team conducted their first Dental check-up camp in Zari, where around 70 people got the check-up done.

8) STREET PLAY

Street Play relating to social issues and social awareness was done in 6 different locations of Goa in the first week of February.

Achievements:

1) Last year, 3 kids mentored by Nirmaan got selected in the prestigious Jawahar Navodaya Vidyalaya Schools, where all their education will be completely sponsored.

2) A new Self Help Group (SHG) was established in Birla to empower the ladies and over 4000 paper bags were sold.

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. Amalin Prince A	EEE	IEEE Journal of Biomedical and Health Informatics, Fusion Engineering and Design, Biomedical Engineering
Prof. Anjan Chattopadhyay	Chemistry	Reviewed a paper for the journal ACS Omega (ACS publication) and a paper for the journal Molecular Physics (Taylor & Francis)
Prof. Anasuya Ganguly	Biological Sciences	Member of Goa Medical College's Human Ethical Committee
Prof. Anasuya Ganguly	Biological Sciences	Reviewed manuscript for "Tissue Engineering" journal
Dr. Jajati Keshari Sahoo	Mathematics	FILOMAT, American Mathematical Society
Prof. K. A. Geetha	Department of Humanities and Social Sciences (HSS)	Quarterly Review of Film and Video - Reviewed a paper titled "An exploratory study of the fluid nature of Reality shows: Assessing definitions and characteristics"
Prof. K. A. Geetha	Department of HSS	Journal of South Asian Studies - Reviewed an article titled "Right Wing Populism: Capturing The Globe"
Prof. K. A. Geetha	Department of HSS	Journal of Social Sciences - Reviewed an article titled " Ateetee: A Multi-functional Deity System of Oromo Women"
Prof. Lakshmi Subramanian	Department of HSS	Inducted as Consulting editor for the Oxford encyclopedia on Asian Business History
Prof. Lakshmi Subramanian	Department of HSS	Member of the Editorial Board for the Cambridge University series on Elements of Music in the city.
Prof. Lakshmi Subramanian	Department of HSS	Appointed Chairperson, International Advisory Board for the Indo German project MICAS-MP form 2020
Prof. Lakshmi Subramanian	Department of HSS	Inducted into the Board of Trustees of the India Foundation for the arts, Bangalore.
Dr. Soumyadip Bandyopadhyay	CS&IS	PC Member of ACM software engineering event ISEC
Prof. Snehanshu Saha	CS&IS	Editor-Special Issue on Astroinformatics, European Physical Journal-Special Topics
Prof. Snehanshu Saha	CS&IS	Elected Fellow-IETE

Faculty Name	Department of	Name of Advisory Committee / Editorial Board
Dr. Vivek Rangarajan	Chemical Engineering	Reviewed 10 International papers for different Journals (Separation and Purification Technology; waste and biomass valorization; Bioprocess and Biosytems Engineering)
Dr. Varinder Singh	Mechanical Engineering	Member of Vidyalaya Management Committee of Kendriya Vidyalaya No.1, Vasco Da Gama, Goa
Dr. Varinder Singh	Mechanical Engineering	Appointed Hon. Secretary, Indian Institute of Metals, Goa Chapter
Dr. Varinder Singh	Mechanical Engineering	Reviewed for Journal of Manufacturing Technology Management (IF 3.385 Clariviate)
Prof. Radhika Vathsan	Physics	Appointed as a consultative member of Quantum Technologies and Applications consortium.
Prof. Rajesh Mehrotra	Biological Sciences	Reviewed three articles – Nature Scientific Reports and reviewed an article - PLOS ONE
Dr. Sayantani Sarkar	Department of HSS	Cities journal

introducing new faculty

Name	Department	Designation	Area of Research Interest
Prof. Snehanshu Saha	CS & IS	Associate Professor	Mathematical Sciences, Theory of Machine Learning
Dr. Pritam Bhattacharya	CS & IS	Assistant Professor, Gr-II	Discrete Maths, Algorithms & Data Structures, Automata Theory, Complexity Theory, Python / C/ Java Programming
Prof. Samit Chattopadhyay	Bio. Sci.	Sr. Professor	Molecular Biology
Dr. Mizanur Rahaman	Mathematics	Assistant Professor, Gr-I	Functional Analysis, Operator Algebras, Quantum Information Theory
Dr. Anupama Sharma	Mathematics	Assistant Professor, Gr-I	Mathematical Modelling, Dynamical Systems, Mathematical Biology

Name	Department	Designation	Area of Research Interest
Dr. Abhishek Kr Singh	CS & IS	Assistant Professor, Gr-II	Theoretical Computer Science: Logic, Automata, Algorithm, Semantics, Verification
Dr. Ravi Kadlimatti	EEE	Assistant Professor, Gr-I	Digital Signal Processing, Wireless Communications, Radar, Beamforming, Orbital Angular Momentum Beams, Good Code Sets
Dr. Biswajit Das	Mech. Engg.	Assistant Professor, Gr-I	Surface Engineering, Laser Processing of Materials
Dr. Nilesh Dadasaheb Pawar	Mech. Engg.	Assistant Professor, Gr-I	Thermal Engineering

World-class Synthetic Tennis Courts inaugurated at BITS Pilani, K K Birla Goa Campus

Director of BITS Pilani, K.K. Birla Goa Campus Prof. Raghurama G inaugurated two newly built synthetic tennis courts at BITS Pilani, Goa Campus on 14th February 2020.

Students' tennis team members expressed their happiness for building international standard courts in the campus. Captain of the boys' team, Joshua Thampy and Sports Secretary, Devashish Rane thanked the Director for supporting the sports culture and getting such high standard sports infrastructure in the campus which benefits the overall development of students. After the inaugural function, an exhibition match was played between the students' teams.

Dr. Chandu Lamani, the PE Instructor and In-Charge - Sports Activity Centre & Sports, stated that the facility has two hitech synthetic courts which are all-weather, fully synthetic, and are built as per international parameters and standards. The courts, along with exclusive player sitting gallery and a spectator sitting gallery, are built at cost of around Rs. 43 Lakhs. The courts will be most appropriate during the monsoon as even after a heavy rain, it can be cleared in about 15 minutes to provide a slip free court to the players."

These courts will give students a chance to experience world class facilities while playing and BITS Goa can proudly host tennis tournaments of both national and international level in future.

Tennis courts are built besides the two world-class synthetic basketball courts, which were inaugurated last year.

Mormugao BDO with panchayat representatives visited BITS campus to understand BITS biogas plant

Mr. Prasidh Naik, Block Development Officer (BDO) of Mormugoa Taluka along with representatives of 10 village panchayats of Mormugao block visited BITS Pilani, K K Birla Goa Campus to understand the functioning of the biogas plant installed at BITS campus. The BDO is exploring the possibilities of seeking guidance by BITS faculty members in installing biogas plants at each village panchayat to treat its wet waste.

Secretaries of all village panchayats and Sarpanch of Sancoale Mr. Girish Pillai, Sarpanch of Cortalim Ms. Senia Pereira, Sarpanch of Majorda Mr. Samson Gonsalves along with their Panch members were part of the delegation led by BDO Mr. Naik. The delegation met Prof. Srikanth Mutnuri, Head, Department of Biological Sciences and Mr. A K Patil, Estate Manager of BITS Pilani K K Birla Goa Campus.

During the visit, Prof. Srikanth took the delegation to the site of biogas plant and explained the functioning of BITS biogas plant and made a detailed presentation on its operation. He emphasized that key point of functioning of any biogas plant is segregated waste. He advised all panchayats to initiate awareness on waste segregation at source across the villages. The biogas plant at BITS campus is functioning since November 2010 as the campus segregated waste collection system is in place. All village panchayats expressed interest in setting up the same for their villages with support of BITS Pilani, Goa Campus.

Photo 1: Mr. Prasidh Naik, BDO of Mormugoa Taluka and Prof. Srikanth Mutnuri, Head, Department of Biological Sciences in the center along with members of the delegation.

BITS Initiative - Distribution of essential grocery

Under the guidance of our Director, Prof. Raghurama G, we supplied essential groceries to about 550 families residing in surrounding areas of Zari and Zuarinagar. In April and July BITS distributed over 5.5 tonnes of essential grocery items worth over Rs. 2.1 Lakhs which included toor dal, atta, rice, sugar, oil, milk, etc. in these areas. Mr. A K Patil along with his team coordinated distribution to these essential grocery items by following all precautions and safety measures.

editorial board

Cover Picture:
Panelists of 'Ultratech's Industry 4.0 - CEO Conclave' held during BGM 2020 on 18.01.2020
L to R:
• Amur Lakshminarayanan - Managing director and CEO - Designate, Tata Communications
• Anant Maheshwari - President, Microsoft India
• Revathi Advaithi - CEO, Flex
• Sanjay Jalona - CEO & MD, Larsen & Toubro Infotech
• Rajat Gupta - Senior Partner, McKinsey

mediaspeak

World-class synthetic tennis courts at BITS Pilani, K K Birla Goa campus

BITS Pilani meet gives audience insights on current research

MODERNISATION OF CURRICULUM
BITS Pilani Goa receives ₹ 1.09 cr international grant
Grant to update existing courses in cognitive neurosciences

BITS Pilani emerge 2nd Div Mormugao champs

विद्यार्थ्यांच्या संशोधनाला 'कल्पक' चालना

CSIF inaugurated at BITS Pilani

BITS Goa faculty wins DST-AWSAR Award 2019

BITS Pilani alumni hold 4th global meet in Goa
ALUMNI INCLUDED CRICKETER ANIL KUMBLE, FLEX CEO REVATHI ADVAITHI, L&T INFOTECH CEO SANJAY JALONA, WORLD MUSICIAN ARKO MUKHERJEE & RAMANAN LAXMINARAYAN OF PRINCETON UNIVERSITY

BITS prof's work shows anti-malarial drug's potential in treating lung cancer

Warriors for a cause

Ten Mormugao p'yats inspect biogas plant at BITS campus

BITS Pilani wins Tata Crucible campus quiz-Goa

'Finding will help scientists formulate better drugs'