



ZENITH

IEEE DBCE Student Branch Newsletter
Electronics & Telecommunication Engineering

2020

Editor: Prof. Yeshudas Muttu Student In-charge: Ms. Neha Joshi

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OBJECTIVES

- To organize Seminars, Hands-on Workshops, Industrial Field visits, Expert Lectures and Technical Events for students & faculty members on and off campus that helps in Skill Development & Lifelong Learning.
- To create an awareness about the industry standards and expectations amongst students by networking with IEEE and Industry professionals.
- To imbibe leadership qualities, team spirit and research culture amongst students for technological novelty and excellence with communal benefits.



About IEEE DBCE Student's Branch

Student Branches provide an opportunity for IEEE Student members to begin networking in their areas of interest and future profession. There are over 3,000 Student Branches in over 100 countries, globally. IEEE Student Branch of DBCE is one amongst them and has got listed under IEEE Bombay Section, Region 10 on December 17, 2018. **Don Bosco's IEEE Student Branch code is STB11433 & School code is 60135646.**

The Executive Committee of IEEE Student Branch, DBCE consists of all the Branch Officers (Chair, Vice-Chair, Treasurer, and Secretary), Sub-Committee Leaders, Branch Counselor and Adviser. To work together as a team, Don Bosco's IEEE Student Branch aims to have regular meetings, build a good rapport with all the IEEE student members, arrange for varied and interesting activities for the members and keep our Student Branch vibrant.

The Don Bosco College of Engineering, Fatorda, Goa established an IEEE student branch consisting of 74 students with the help of Prof. Yeshudas Muttu as the IEEE Branch Counselor, and Dr. Varsha Turkar as the IEEE Branch Adviser.

The inaugural ceremony was held on 1st February 2019 in the Seminar Hall of the college. The Chief Guest for the function was Mr. Shashank Krishna; Director & CEO of Katmal Info Technology, Padma Shri 2019 Nominee (Science and Engineering field) and the Guest of honor was Dr. B. Satyanarayana, IEEE Bombay section Secretary and Scientific Officer (H), TIFR, Mumbai.



IEEE Student Branch can establish various affinity groups, chapters, etc. which are very specific to age-groups, women and engineering domains. For its continued growth and vitality, IEEE DBCE Student branch has set up Women in Engineering (WIE) Affinity Group on August 7, 2020 and the **geo-code is SBA11433.**

EVENTS DIGEST

WORKSHOPS

WORKSHOP on “Drone Design and Aviation”

The IEEE Student Branch of DBCE, in collaboration with Eduvance and Drona Aviation organized three days hands on workshop on “Drone Design and Aviation” from 7th February to 9th February 2020. Prof. Yeshudas Muttu, IEEE Branch Counselor & Prof. Flavia Leitao were the faculty coordinators for the workshop, along with Dr. Varsha Turkar, HOD of ETC Dept.

The resource person for the workshop was Mr. Prathamesh Satardekar, Senior Systems Engineer & Mr. Ashish Yadav, Junior Systems Engineer from Eduvance, Mumbai. The main objective of this workshop was to give the student a hands-on experience of the latest technologies that are used in industry, such as Drones, AR (Augmented Reality) & VR (Virtual Reality).



The participants were asked to pair up in groups of two and were provided with the necessary



components to assemble a drone. The students also learnt methods to program any hardware such as In System Programming (ISP), USB port programming and wireless programming. Finally, they tested the experimental programs and APIs, and also were successful in flying the drones. This event was one of the activities planned under the MoU signed between Eduvance and DBCE.



WORKSHOP on “Orientation Programme on Google Classroom”

A Hands-on Workshop on Google Classroom was conducted by IEEE Student Branch Counsellor- Prof. Yeshudas Muttu for Faculty members of Electronics & Telecommunication Engineering on July 16, 2020. The main objective of this Programme was to make the teaching more productive, collaborative & meaningful.



The participants were briefed about college G-Suite account & provided practical experience on Google Classroom. The four main tabs of the Google Classroom, namely: Stream, Classwork, People and Grades were explained in detail. Prof. Yeshudas Muttu emphasized more on adding material to the classroom & demonstrated by adding Web link, YouTube Search Video & link, file from Google Drive & Desktop. Later, the participants were engaged with creating & scheduling the assignments/Quiz assignments for the students.

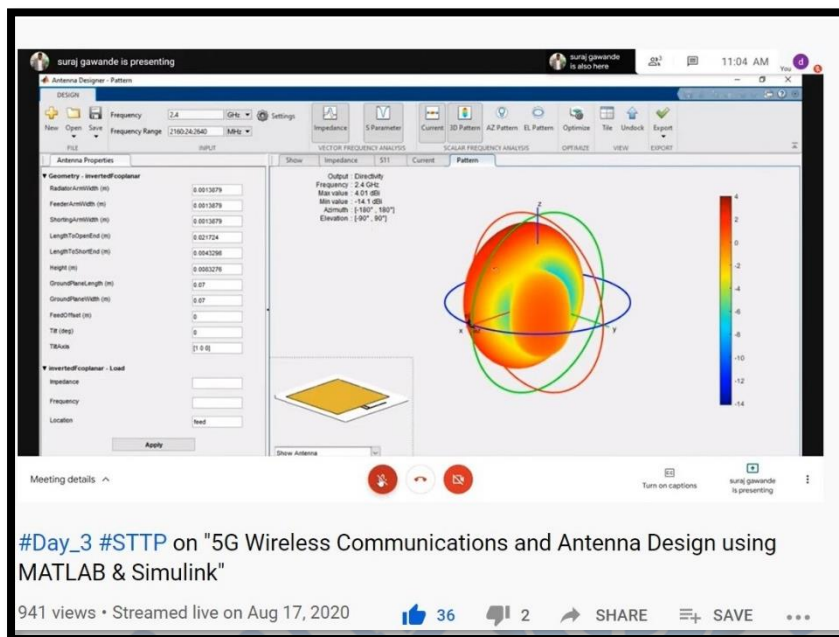
The workshop concluded with Linking Google Classroom with Google Meet Platform using Google calendar on Classwork Tab that will provide the feeling of Virtual Classroom for Students as well as Faculty members. All the faculty members created the Google Classroom for their respective Subjects & Classes that will definitely provide smooth functioning of teaching process.

WORKSHOP on “5G Wireless Communication and Antenna Design using MATLAB and Simulink”

With an objective of providing an exposure to fundamentals of MATLAB and Simulink for Computation, Signal Processing, Hardware Interfacing, Antenna design and design of 5G Wireless Technologies, a 5 day online short term training programme titled “5G Wireless Communication and Antenna Design using MATLAB and Simulink” was organized on 11th, 12th, 17th, 18th and 25th August 2020, by DBCE Student satellite Club-PARIKRAMA in association with IEEE Students branch, technically sponsored by IEEE Bombay Section WIE (Women in Engineering) Affinity Group.

The short-term training was attended by researchers, academicians, industry professionals, and students not only from India but also from all around the world. A total of 817 participants registered, out of which 184 were International participants. The sessions were

organized via online platform and the resource persons were: Mr. Suraj Gawande, Senior Application Engineer, DesignTech systems Pvt. Ltd. and Mr. Uvaraj Natarajan, Senior Application Engineer, Wireless Communications at MathWorks India Pvt. Ltd.

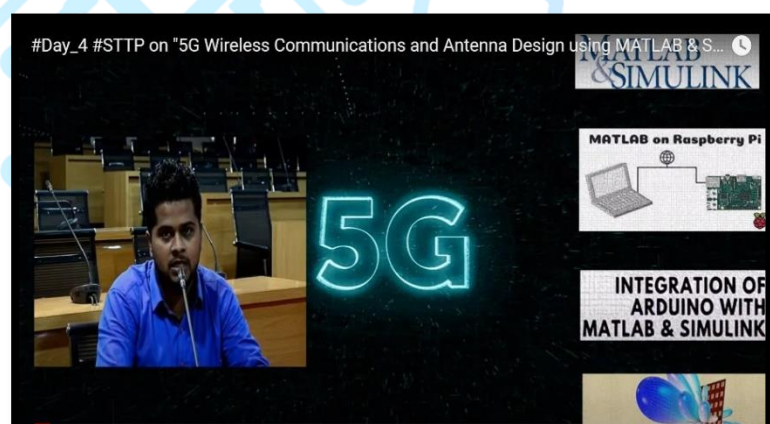


The topic for the first day was “Fundamentals of MATLAB” where the Mr. Gawande introduced and demonstrated the working of the computing language; whereas on the second day of the STTP he delivered a session on “Introduction to Simulink Fundamentals” wherein he provided a detailed description about Simulink Graphical Environment

and presented the various toolboxes, blocks, and signals in Simulink Libraries.

The focus of day 3 was on designing stand-alone antennas and antenna arrays using the Antenna Toolbox in MATLAB. The session titled “Antenna design using MATLAB” included visualization of antennas using a catalogue of parameterized elements, demonstration of the design of an omnidirectional antenna with given specifications using Antenna Designer App in MATLAB, elaboration on the choices to be made while designing antennas and the Antenna Array Designer App was used to indicate the design and analysis of 6- element linear array of half wavelength dipoles.

The topic for Day 4 was “Hardware Interfacing with MATLAB” where the speaker briefly explained MATLAB Coder, Simulink Coder, HDL Coder & Embedded Coders. Code generation & deployment into hardware board, configuring Simulink models for embedded code generation and effectively

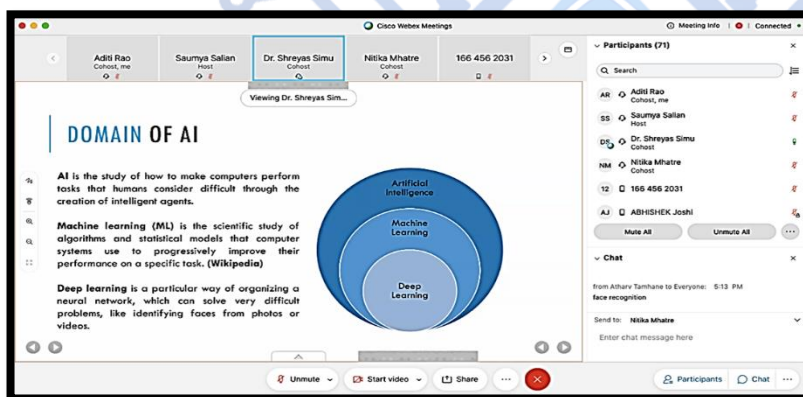


interpreting the generated code were some key highlights of the session. The final session was titled session “5G Wireless communications using MATLAB” was delivered by Mr. Uvaraj Natarajan. Basic concepts of FDD/TDD, OFDMA, MIMO, Frame structure and variable carrier sub-spacing were covered. Under 5G measurements and testing, 5G NR

downlink ACLR measurement and over-the-air testing with Software Defined Radio (SDR) and RF instruments was covered. Subsequently, there was a brief valedictory function, wherein a few participants provided their valuable feedback about the workshop. Dr. Varsha Turkar, HoD of ETC Dept. and chair, IEEE Bombay Section-WIE Affinity Group, delivered concluding address and cited the highlights of the STTP. The session concluded with Prof. Mohini Naik proposing the vote of thanks.

WORKSHOP on “Introduction to AI and its Applications”

IEEE Bombay Section WIE AG, IEEE DBCE Student branch WIE AG, Goa & IEEE DMCE Student branch, Navi Mumbai organized a 5 – days online Skill & Knowledge Enhancement Programme on “Introduction to Artificial Intelligence & its applications” in association with IEEE Bombay Section from November 3-7, 2020. The main objective of this event was to make the participants aware about the fundamentals of Artificial Intelligence, Case studies & Hands on tools for its implementation. The event received a total of 182 registrations.



The first session was on Introduction to AI and ML delivered by Dr. Shreyas Simu. The second session held on November 4, 2020 was on Artificial Neural Systems: Preliminaries, Models and Algorithms delivered by Prof. Deron Rodrigues. On November 5, 2020


Prof. Deron Rodrigues spoke on Applications of Neural algorithms and systems. The next session held on November 6, 2020 on Fuzzy Systems and Evolutionary Algorithms was delivered by Dr. Shreyas Simu and on November 7, 2020, Dr. Sangita Chaudhari spoke on Demystifying Machine Learning using Orange.

The questions posted by the attendees were then answered by the speakers. At the end of the session, the host delivered a vote of thanks to all the Resource persons, Patrons – Dr. Neena Panandikar, Dr. Sudhir Kumar, Convener – Dr. Varsha Turkar, Event coordinators- Prof. Yeshudas Muttu, Prof. Saumya Salian, Prof. Mohini Naik, Volunteers and the Participants for their support and efforts in making the five day Programme a success.

INTRODUCTION TO ARTIFICIAL INTELLIGENCE AND ITS APPLICATIONS

Day 2 – Artificial Neural Systems: Preliminaries, Models, and Algorithms

Our Speaker



Mr. Deron Rodrigues

- Mr. Deron Rodrigues completed his Master's degree in Electronics Communication and Instrumentation in the year 2014 from Goa Engineering College, Farmagudi-Goa.
- He joined Don Bosco College of Engineering as an Assistant Professor in Electronics and Telecommunication Department and is currently working there for the past 7 years.
- His Fields of Interest include Microwave Engineering, Artificial Neural Networks, Digital Communication, Error Control Coding and Embedded Systems.

Speaking: Nitika Mhatre (Cohost)

Aditi Rao (Cohost, me)

Saumya Salian (Host)

Jinu Mathew (Cohost)

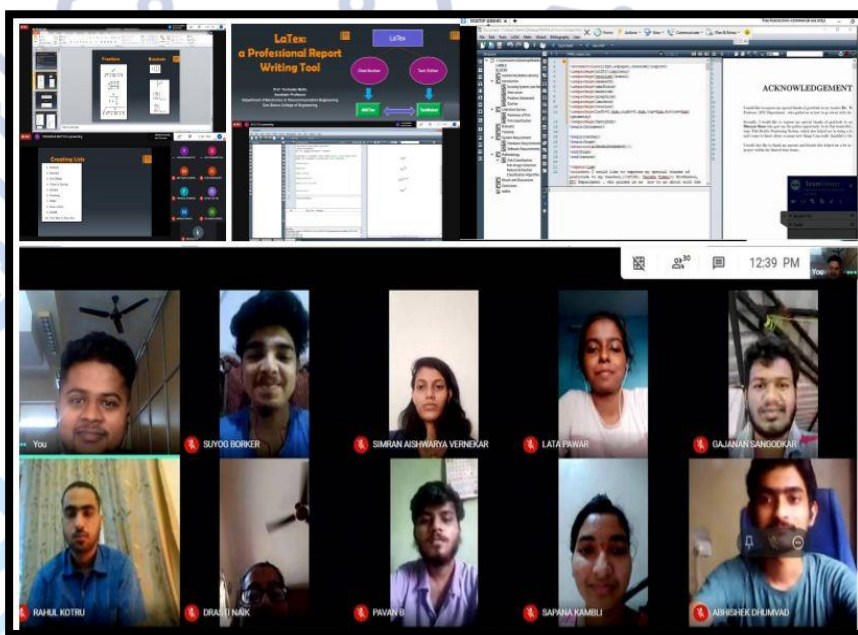
Dr. Nitika M. (Cohost)

WORKSHOP on “LaTeX: A Professional Report Writing Tool”

IEEE Student Branch of Don Bosco College of Engineering, Goa organized a short-term course on LaTeX platform for final year students of ETC Department. A hands on workshop was conducted on 22nd & 28th October, 5th, 12th, 19th & 26th November, 10th and 17th December 2020 from 2:30 p.m. – 4:30 p.m. right from installation of MikTeX & Texmaker software till creation of final LaTeX document.

The resource person for the course was Prof. Yeshudas Muttu, Vice-chair, IEEE Bombay Section TPAC. The main objective of this course was to make students aware about software involved in LaTeX which will help them build the final year project reports in a most effective way.

In his session, Prof. Yeshudas Muttu described listing in LaTeX and its variants like creating list within a list, use of labels, etc. He explained the procedure to install packages for its use in the LaTeX document. The major part of the course, i.e., troubleshooting the LaTeX document was done on a one-on-one basis using TeamViewer software. The event received a good feedback and students were able to submit their mid-year project report, perfectly compiled and executed using Texmaker & MikTeX software.



EXPERT TALKS

The IEEE Student Branch of DBCE, Goa Organized “Tech Insight: A Webinar Series”, in association with the IEEE Bombay Section under the leadership of IEEE Branch Counselor, Prof. Yeshudas Muttu from 20 May 2020 to 28 May 2020 with unflinching support & motivation of Head of ETC Department, Dr. Varsha Turkar.

“Image Forensics”

The speaker for this webinar on 20th June 2020 was Dr. Sangita Chaudhari, Professor RAIT, Navi Mumbai, on “Image Forensics”. Dr. Sangita Chaudhari started with a history of image manipulation. Later on, she explained Image Forgery, its two approaches, enhancing & watermarking images and techniques involved in the detection of image forgery. Details on how to go about image splicing detection and inconsistencies of detection were stated. Towards the end of the session, the speaker has an interaction with Prof. Yeshudas Muttu to answer most of the questions posted by the attendees onto the YouTube live chat.



“Data Science and Data Analytics”



The speaker for this webinar on 21st June 2020 was Dr. Amiya Kumar Tripathy, Professor, DBIT, Mumbai, on “Data Science and Data Analytics”. Dr. Tripathy commenced the session by introducing the basics of data science and the Internet of Things (IoT). He then played a video of ‘Life Simplified’ which showed how IoT simplifies our lives in daily use. The speaker proceeded to explain the basics of Analytics and its three types, the programming tools for data

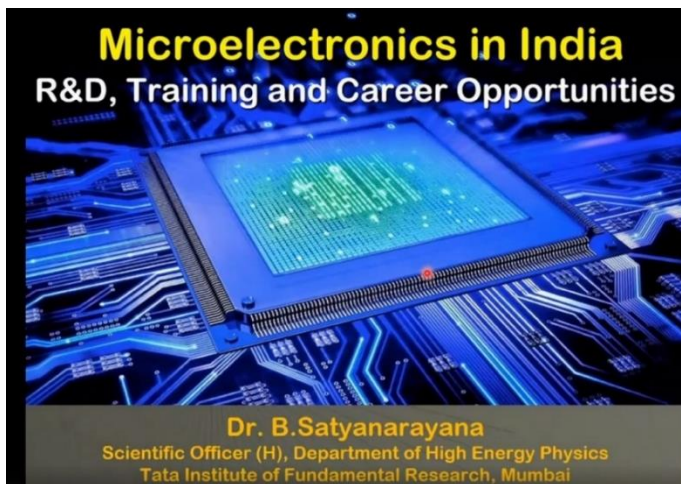
research which include SAS, R, Hadoop, Python, etc.

“Wireless Network Simulation Tool”

The speaker for this webinar on 22nd June 2020 was Dr. Saurabh Mehta, Chief Academic Officer, VIT, Mumbai, on “Wireless Network Simulation Tools”. Dr. Mehta introduced to the wireless networks & spoke on how it is related to IoT and the three standard acceptable ways to test wireless networks.



“Microelectronics in India”



The speaker for this webinar on 26th June 2020 was Dr. B Satyanarayana, TIFR, Mumbai, on “Microelectronics in India”. Dr. Satyanarayana provided knowledge about study and manufacturing of small electronic circuits. Further, he explained industrial standard ICs, ASSP, ICs & VLSI. Sir spoke about the challenges of technology and various jobs available like design engineers, verification engineers, etc.

“Satellite Image Processing”



The speaker for this webinar on 27th June 2020 was Dr. Varsha Turkar, Professor & Head of ETC Dept., DBCE, Goa, on “Satellite Image Processing”. Dr. Varsha Turkar began her session with the basics of remote sensing, its need and techniques. SAR (Synthetic Aperture Radar) and POLSAR (Polarimetry SAR) with its various applications along with advantages and disadvantages were discussed. Data processing steps, thermic map, scattering matrix, image classification, methodology and data processing

were elaborated.

“Industrial Machine Learning: Considerations and Opportunities”

The speaker for this webinar on 28th June 2020 was Dr. Shaunak De, Data Scientist, Capella Space Corporation, USA, on “Industrial Machine Learning: Considerations and Opportunities”. He initially spoke about how he built his mini-project – various libraries used, the ideation, etc. With knowledge of about 20 programming languages, he stated that the basic Product Roadmap to deep learning is Data Labelling, Data Storage, Data Versioning and Data Processing. He also gave us a variety of platforms to pick and choose from to better our journey on the given roadmap.



FIELD VISITS

EDUCATIONAL TOUR to “Nashik”

The IEEE Student Branch of Don Bosco of Engineering, Goa organized its second Educational Tour to Bangalore from 28th February 2020 to 4th March 2020 under the guidance of IEEE Branch Counselor, Prof. Yeshudas Muttu. 61 IEEE student members along with 4 Faculty members, Prof. Yeshudas Muttu, Prof. Mohini Naik, Prof. Deron Rodrigues & Prof. Mathilda Colaco visited Nashik Thermal Power Station- Eklahare, Sarda Farms & Sula Automation.

The team visited Sula Vineyards to get acquainted to the automation technology used. The guide toured us through the entire process involved in making wine & process control instrumentation involved in the same.



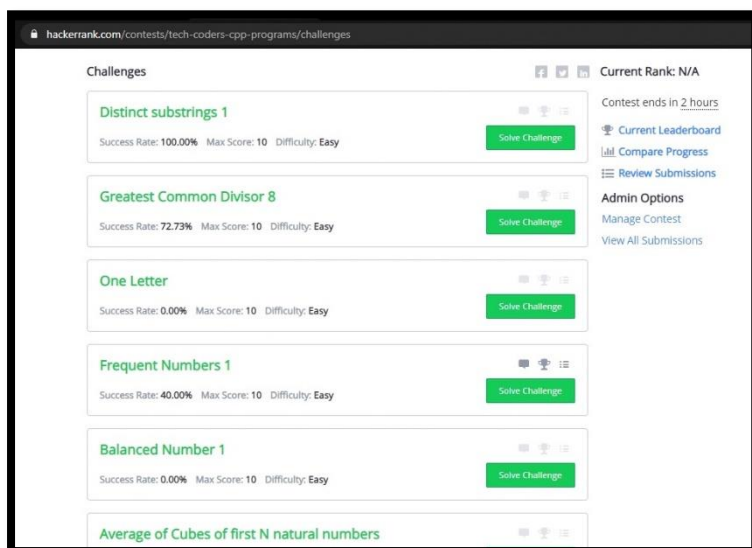
The IEEE members travelled to Sarda Farms which is a 100% pure, organic dairy farm. It is an 11-acre farm that houses 1250 cows. The team visited Nashik Thermal Power as well. The educational tour was a great benefit for the IEEE student members to understand about the various concepts of Process control Instrumentation at Sula Automation, Generation of Electricity at Thermal Power station & RFID technology with IoT interface at Sarda Farms.



COMPETITIONS

Programming Competition “Tech Coders”

The IEEE Student Branch of Don Bosco College of Engineering organized a one-day online Coding Competition “TECH CODERS” on September 13, 2020 on HackerRank Platform for DBCE Students under the guidance of IEEE Branch Counsellor, Prof. Yeshudas Muttu. The main objective of this competition was to enhance the student's logical thinking and problem-solving skills considering the current scenario with respect to placements.



The C++ based Competition was scheduled from 3:00 pm – 6:00 pm & Python based Competition was scheduled from 6:30 pm – 9:30 pm. The Problem statements on C++ and Python coding were grouped into three different modules, i.e., Easy, Moderate & Difficult. Each module was allocated with one-hour duration. The rules and score allotment for each block was provided to the contestants via an online mode well before the event.

At the end of C++ Programming Competition, the final scores were decided by the moderators and the ranks were as follows:

Rank	Name of the Participant	Class	HackerRank-ID	Final Score
First Place	Mr. Saiesh Naik	TE-ETC	sai40naik	123 Points
Second Place	Mr. Yash Diniz	BE-COMP	yashdiniz	119.50 Points
Third Place	Mr. Amatya Katyayan	TE-COMP	amatya27	91 Points

The competition ended at 9:30pm, with the following rankings:

Rank	Name of the Participant	Class	HackerRank-ID	Final Score
First Place	Ms. Valini D'silva	BE-ETC	valinidsilva	250 Points

Second Place	Mr. Carson Rodrigues	SE-COMP	rodriguescarson	208 Points
Third Place	Mr. Yash Diniz	BE-COMP	yashdiniz	190 Points

This event received an overwhelming response of 61 Signups on the HackerRank Platform. Principal- Dr. Neena Panandikar & HOD-ETC Dr. Varsha Turkar appreciated the efforts put in by the IEEE Team. Prof. Yeshudas Muttu congratulated the IEEE Committee Members for working tirelessly, right from formation of Problem statements, debugging the codes, developing test cases & making the HackerRank Platform ready for the competition. The participants showed great zeal & enthusiasm in coding & were awarded e-certificates for the same.

CELEBRATING THE BOND OF TECHNOLOGY

Region 10 SYWLC Congress 2020

IEEE Student branch of Don Bosco College of Engineering, Goa got selected as the Student Branch Partner for Student Tracks of R10 Students, Young Professionals, Women in Engineering, Life Members Congress (SYWLC) 2020 on September 17, 2020. Mr. Gautam Desai, IEEE Vice-Chair, was appointed as a Volunteer for SYWLC Congress 2020 as a representative for our student branch. Out of the many student branches from across the world selected as Student Branch Partners, IEEE DBCE Student Branch was one of the few from IEEE Bombay Section and the only one from Goa.



By being the Partnering Student Branch Lead, Mr. Desai was expected to contribute by initiating Student Track sessions through screening/broadcasting student track sessions to extended audiences within their SB community. Partnering SBs were allowed to share the student track sessions via any format including in-person (Physical presence of attendees) or virtual (online presence of attendees) mode. The first virtual meet with all the Lead Volunteers regarding the briefing of the Entire SBP Program on 19th October 2020 (Saturday) 6:00 PM.

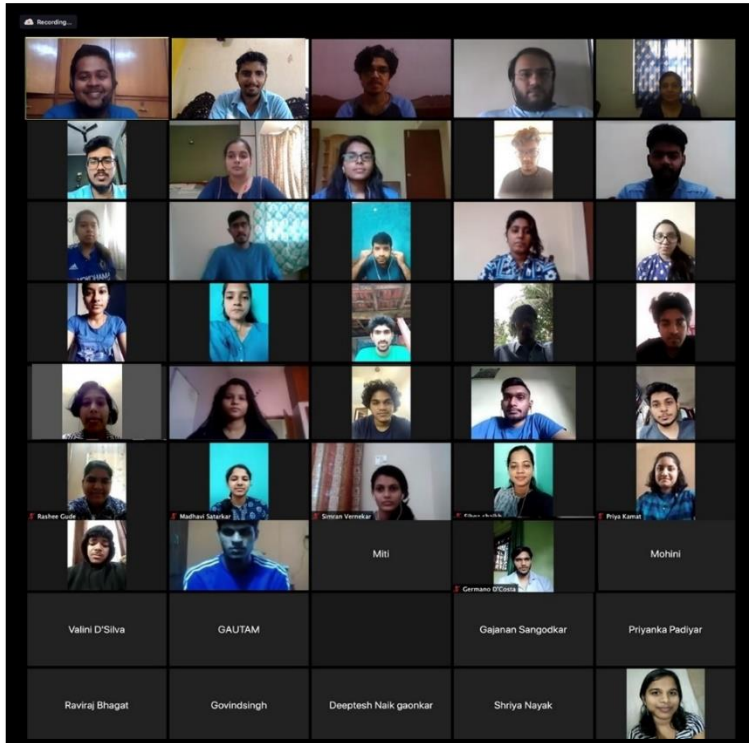
IEEE Day Celebration 2020

The IEEE Student Branch of Don Bosco College of Engineering celebrated IEEE Day on 02 October 2020 from 10.00am to 1.00pm on Zoom Platform. The chief guest was Dr. Saurabh Mehta (Chair, IEEE Bombay Section Technical & Professional Activities Committee) and was attended by Dr. Varsha Turkar (IEEE Student Branch Adviser), Prof. Yeshudas Muttu (IEEE Student Branch Counsellor) and all IEEE student members.

Dr. Saurabh Mehta spoke about the importance of celebrating IEEE Day. Moreover, he also informed the attendees of the various benefits and perks an IEEE member can avail. He encouraged the student members to take upon the facilities that the organisation provides and

to use it at full advantage as it would help in building professional careers.

The second half of the event included fun events for the student members. The main aim to have this was to strengthen communication and networking between fellow members by participating in the games that followed. The event came to an end as Mr. Renvick Fernandes delivered a vote of thanks.



SMELT 2020: Leadership Contest

Leadership Proposal Contest was an initiative by IEEE Bombay Section SAC under SMELT 2020 to understand various challenges faced by Student Branches i.e. Branch Officers and call for solution proposals from branches which aim to solve these challenges. Each student branch was allowed to submit one proposal after brainstorming the challenges and propose solutions which could be implemented with the help of IEEE Bombay Section. Top 5 proposals were to be shortlisted and were asked present their idea. IEEE DBCE Student Branch was shortlisted for Round 2 of Leadership Contest - SMELT 2020. IEEE DBCE Student Branch EXE-COM was present for the same & Mr. Gautam Desai, IEEE Vice-Chair, presented the proposed event in the most effective way in 5 minutes in front of the panel on October 11, 2020.

Student Branch Associate Program: AISYWLC 2020

The All-India Student - Young Professionals - Women in Engineering - Life Member Congress (AISYWLC'20) is the flagship event of the IEEE India Council. Each student branch had to nominate at least one member to co-ordinate with the

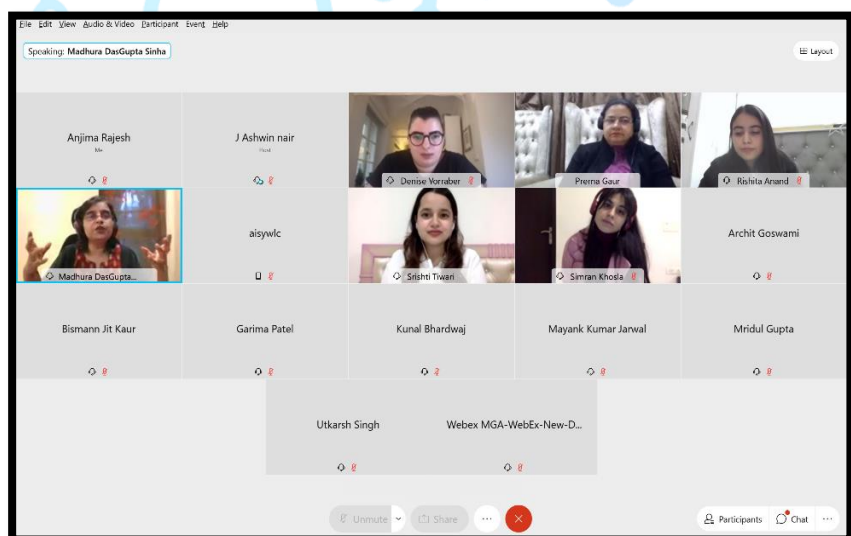


AISYWLC'20 team as a 'Student Branch Associate'. Under this program, the selected SB Associate would perform like a lead volunteer from their respective SB community. This was being done to reach out to the student members and provide for better networking opportunities. From the IEEE DBCE Student Branch, Ms. Anjima Rajesh was nominated as the student branch associate. The event went on from 18 December to 22 December 2020.

This Congress started on 18th December 2020 during which the delegates were addressed by the Vice

Chancellor of Host Institution- Prof. Archana Mantri, followed by Chair- IEEE Delhi Section and more such speakers. Later the chief guest Mr. Sanjeev Bikhchandani, Founder Naukri.com & Padma Shree Awardee 2020 took over. On the 19th December, there was a talk based on "IEEE WIE: Changing the Tides" where 7 speakers spoke. On Day 2 of the Congress, a presentation by YP Affinity Groups, Panel Discussion on Life Members to share their experience and expertise with fellow LMs, a Keynote Session about "The Evolution of Cyber Security Through the Years: An Indian Perspective" and Panel Discussion – "Role of Next Generation in Space, Technology & Exploration" were held where around 4 speakers spoke for each topic respectively.

On 21st December, the agendas were "Flavours of IEEE: Volunteerism, Leadership & Vision 2021", a Session on "Life Members Activities", a Panel Discussion on "Entrepreneurship: Journey to Success via Failures" and Keynote Session – "Managing Disruption in a Post-COVID World."



On 22nd December, the final day of the Congress, there was a Life Members Affinity Group Meet & Presentation, a Panel discussion about “5G: The Way Ahead” by 4 speakers. It concluded with a beatboxing performance and comedy night, followed by the closing ceremony.

ACHIEVEMENTS & FELICITATION

- IEEE DBCE Student Branch Adviser, Dr. Varsha Turkar was appointed as the Chair of IEEE Bombay Section WIE Affinity group on August 1, 2020
- IEEE DBCE Student Branch Counselor, Prof. Yeshudas Muttu was appointed as the Vice-chair of IEEE Bombay Section Technical Professional Activities Committee (TPAC) and Committee member of IEEE Bombay Section WIE Affinity group on August 1, 2020.
- IEEE DBCE Student Branch Chair, Mr. Renvick Fernandes was appointed as a volunteer of IEEE Bombay Section Student and Young Professionals Activities Committee (SAC) and WIE Affinity group on August 1, 2020
- IEEE DBCE Student Branch established Women in Engineering (WIE) Affinity Group on August 7, 2020.
- IEEE DBCE Student Branch Vice-Chair, Mr. Gautam Desai was appointed as a Volunteer for R10 SYWLC Congress 2020 as a representative of IEEE DBCE Student Branch on September 17, 2020
- IEEE DBCE Student Branch WIE AG Chair, Ms. Neha Joshi was appointed as a volunteer of IEEE Bombay Section WIE Affinity group on August 1, 2020
- Ms. Anjima Rajesh was nominated as the Student Branch Associate of IEEE Student Branch for AISYWLC'20 on December 18, 2020.

Upcoming IEEE DBCE EXE-COM 2021



Ms. Neha Joshi
IEEE Chair



Mr. Saiesh Naik
IEEE Vice-Chair



Ms. Sheena Mashelkar
IEEE Secretary



Ms. Rosann Godinho
IEEE Joint Secretary



Mr. Saish Mandrekar
IEEE Treasurer



Ms. Anjima Rajesh
IEEE Joint Treasurer



Mr. Nafiro Fernandes
IEEE Webmaster



Prof. Yeshudas Muttu
IEEE Branch Counselor



Dr. Varsha Turkar
IEEE Branch Adviser