SPECTRUM

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Department of Electronics and Communication Engineering
Institute of Technology, Nirma University
Ahmedabad - 382481

Vision of the Department

To lead in developing cutting-edge knowledge & technology and producing globally competent professionals in Electronics and Communication Engineering

Mission of the Department

To shape technically competent, analytical, Creative and problem solving Electronics and Communication Engineers capable of meeting Industry challenges and social needs

To foster a conducive environment For multidisciplinary research and innovation

To encourage faculty and students to achieve Excellence in the profession and to grow as ethical and socially responsible leaders

Preface

Dr. Yogesh Trivedi

SPECTRUM is a mouth piece of Electronics and Communication (EC) Engineering Department of Institute of Technology, Nirma University. The EC department is one of the dynamic departments of the Institute. The spectrum of this SPECTRUM is wide. It is published with a support from students' organization, i.e. Electronics and Communication Students' Organisation (ECO), which was established in 1998. The then Director of SAC Ahmedabad, Dr. Joseph George, along with Principal Prof. H V Trivedi, HoD Prof. M D Desai and Section Head Prof. D K Kothari in the presence of faculty members and students, kicked off the inaugural function of ECO. On achieving the mission and vision of the university, the ECO has been very active in organizing versatile events for the benefits of society, such as technical workshops/hands on training programs for the students, cultural programs and sweet distribution to the underprivileged workers of the society on the festival of Dipawali. The SPECTRUM publishes contributions of the faculty members and students by listing, publications, different achievements of the students in different competitions organized across India, industrial visits of students, expert lectures, visits of eminent personalities in the department throughout the year, voice of Alumni, placement of the students in Industries for internships as well as for jobs and technical articles written by students and faculty members.

The content of the SPECTRUM is an excellent guide for the new comers and memorable history for the stakeholders of the EC Department. The expert members of NAAC and NBA have appreciated the efforts of the department shown in the SPECTRUM.

Dr. Yogesh Trivedi,
Professor, Department of Electronics and Communication Engineering,
Institute of Technology, Nirma University,
Ahmedabad-382481

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Experience of the Connect Between Life at NU and Life at ARM

Mr. Viraj Mankad
(2022 Batch Passout)

Transition is a phase that is critical in every field or walk of life. In one or the other way, there is a transition that happens in a student's life. After the academic learning during the four precious years of college, institute-industry transition plays a very important role in shaping our future and career path. To put it in simple words, the institute-industry shift is a path of interaction and a way of practicing the academic and practical knowledge of the subjects learned during the four years of B.Tech. So, in this article, I have penned down my views and experiences that I have enjoyed during my transition phase from Life at Nirma University, to Life at ARM. I experienced a very strong bridge of knowledge and learning, that connected my life at college and life in the industry. The ultimate goal while working at any company, i.e., the industry should be to be eager to learn at every stage and from every colleague. During college days, we might feel for some topics, that whatever we are learning might not be much useful moving ahead. But it is the student's approach that matters when it comes to learning academics and applying that in industry.

My journey at ARM, since August 2022, has been very much fruitful and exciting. The teachings by professors at the Department of Electronics and Communication (EC) Engineering, Institute of Technology, Nirma University, are proving to be the key to building a stronger foundation for the work profile at ARM. At ARM, I have felt the need for each subject taught in the syllabus of EC, though the work mainly deals with processor-related subjects. But, the advancement in processor technology, and automation, has enabled the use of IoT, Networking, etc. to a greater extent. So, there is a great scope for EC students, 10 years down the line, as the Government's support towards semiconductor industry and made in India chips is confident. Also, at times, I have experienced my approach to be more detail-oriented, which I practiced at college while completing assignments, or preparing for exams. This is the difference between institute learning and industry learning, that they expect quick and outcome-based work from the employees, and so, every time the detailing is not necessary. I also got the advantage from my interactions with faculties regarding different projects, subjects, research work, etc. This will help at a bigger stage while presenting a specific topic at the company. If we have presented our work in form of special assignments, sincerely at college, then that will surely help further.

The experience of the Winter Internship at ISRO gave me a lot of benefits in terms of in-depth analysis, research outcome, and conversation with senior members. On the side of materials of a subject, in today's world with technological advancements, there are a lot of PDFs and contents available on the internet, in the form of text, audio, video, etc. But I have gained lots of knowledge from books, so there should be a habit of referring to books.

At ARM, sometimes to brush up on the basic concepts, books of respective subjects did help me. Even at the time of placement preparation, books can be handy to read out topics in-depth.

Talking about placements, as an important first step of the transition, when a student prepares for placement, that is the time he has to develop his path for moving from academics to industry. It took 11 months for me to get placed, right from the start of the season. The placement season started around August 1, 2021, and I got placed on July 1, 2022. This was because I had applied selectively to the companies of my choice, that offered core domain work. I was sure to continue my career further in EC, and not divert to computer science or core software. Being patient and putting in persistent effort, is the key to getting placed in a very good company of one's own choice. I have seen many students getting disheartened on knowing that their friends' have been placed and they have not been. But we need to understand that placement is not a race to see who gets placed first. It is a process that should be enjoyed throughout and taken as an opportunity for us to learn something new, in form of tests, interviews, interactions, preparations, guidance from peers, alumni, faculties etc. If your friend gets placed, you should contact him/her and take guidance, as to what and how they had prepared. The methodology followed by each student may be different, and that can give a different angle to think in terms of preparation for a specific subject. LinkedIn is a powerful tool that can help in placement preparation, and at the department level, the EC Career Care Portal is a bible for students to get materials and guidance for whichever field they desire. So, the maximum benefit should be taken from these resources, and on top of it, the interaction with peers, alumni, and faculties can be a driving force and can give assurance to one's confidence. Building a strong rapport with alumni is necessary to get guidance about current industry trends and preparation tips.

Talking about Life at ARM, as per the experience of the first 5 months, I can infer that the first year after entering the industry is a net practice and a learning phase that gives a cushion for a smooth transition from college life to industry life. So, one needs to be proactive in learning new concepts and try to contribute to the industry and company, with full faith and honesty. Being honest and diligent, along with being hardworking and persistent, makes a big difference in professional growth. I was fortunate to visit the United Kingdom (UK) for a Global Graduate Conference by ARM, in October 2022, and it was a wonderful experience to interact and learn with experts of ARM. The interactions at such a global forum of graduates, made me realize how important it is to sincerely study the four years of B. Tech. I enjoyed exchanging my views on practical and hands-on approach in engineering with colleagues from world-wide offices of ARM, and I discussed how Nirma University is putting constant efforts in the direction of practical education, and I got to know the approach of foreign universities as well. At this level, I understood the necessity of foreign collaboration and expert lectures, which is a good practice followed by the EC Department. The need for industry research is also rising rapidly, as people require a quick and effective solution to a problem, for which research is an integral step. The faculties at EC Department, give importance to writing at least one research paper over the time of 4 years, which is very useful to become technically sound. If a student is involved in research work, then different aspects of a technical concept can

be analyzed with a broader vision. Also, one can deep-dive into a specific topic to understand the root-level analysis.

In industry, life is quite different than college environment. Here, it is the employee who needs to take care of his knowledge growth as well as contribute to projects and tasks. So, everything will not be served directly, instead, exploration is the way through which one can understand concepts better. Thus, work in the industry is a collective process of learning, exploration, and performance. I wish all the very best to the students appearing for placements this year and even the upcoming batches. Self-belief and confidence are the prime pillars by which one can develop a smooth and efficient connect between the institute and industry. Please feel free to connect with me anytime via any of the platforms, and I will be happy to guide.

About author,

Mr. Viraj Mankad (18BEC052) is an alumnus of the Department of Electronics and Communication (EC) Engineering, Institute of Technology, Nirma University, passed out as B.Tech. EC in the year 2022. He is currently working as a gaduate engineer in the domain of CPU Design Verification at ARM Embedded Technologies Pvt. Ltd., Bangalore.

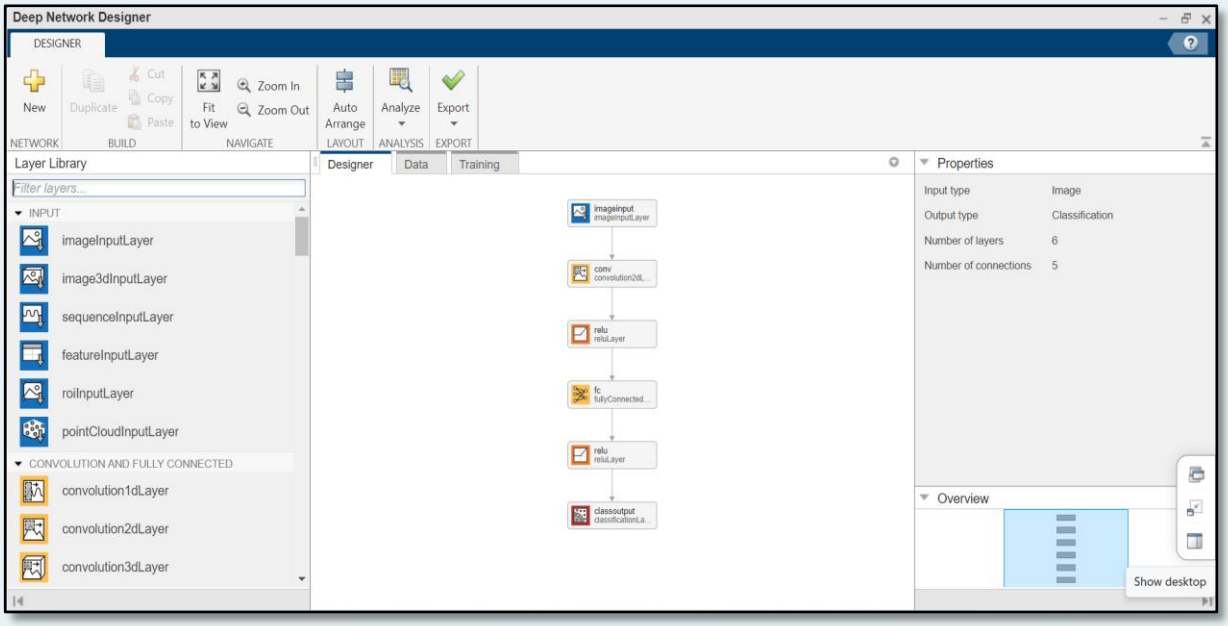
Deep Network Designer App of MATLAB: No Code Deep Learning

Dr. Manish Patel
Assistant Professor, EC

Machine Learning (ML) has already applied and proved its potential in many domains. ML uses feature engineering and established techniques for regression or classifications which ultimately helps in taking decisions. While in Deep Learning (DL), the network of layers extracts the features and makes decisions as well. The designer should be able to create a suitable layered network, handle large datasets, perform training processes, evaluate performance and revisit the steps if performance is not found satisfactory. All these iterative steps need sound programming along with related theoretical background.

ML/DL has potential for applications in cross disciplines also. If the researcher or scientist is not working in the core domain of ML/DL but wants to apply ML/DL then the programming can be an obstacle. So certain GUI based apps are available which helps in such scenarios. One of such good apps from MATLAB is Deep Network Designer.

Deep Network Designer is a MATLAB app that helps researchers and scientists to design, train, visualize and debug deep learning networks. It provides an interactive canvas for exploring some existing architecture, creating and editing different network architectures, including layers, connections and parameters. This helps designers to understand how different architectures and parameters affect the performance of the network which in turn helps to debug and optimize the network.



The app also offers a range of visualizations for training and evaluating deep learning models. The training progress plot of loss and accuracy can be used to understand the performance of the network over time.

The GUI of the app can be opened by typing the command 'deepNetworkDesigner' at the command prompt of MATLAB or can be found from the 'APPS' menu at the top. Once opened it seems as shown in the above figure.

Initially, it will ask to create a new blank network or even existing available pre-trained network can be selected. In case of new blank network, a custom network can be designed by selecting different layers from the left panel, just drag and drop. Such a sample network for image classification is visible at center of the figure.

The 'Auto Arrange' button will help to organize the layers and the 'Fit to View' button will help for its visualization. 'Analyze' button will perform some initial checks of the network. The 'Data' tab will take care of selection of dataset, data-augmentation and splitting the dataset. The 'Training' tab can be used to select the training parameters (such as optimizer, learning rate, number of epochs etc.) and then perform model training. On completion of the training process, the performance can be seen in terms of the loss and accuracy plots.

So, the Deep Network Designer app can do following:

- Build, import, edit, and combine networks.
- Load pretrained networks and edit them for transfer learning.
- View and edit layer properties and add new layers and connections.
- Analyze the network to ensure that the network architecture is defined correctly, and detect problems before training.
- Import and visualize datastores and image data for training and validation.
- Apply augmentations to image classification training data and visualize the distribution of the class labels.
- Train networks and monitor training with plots of accuracy, loss, and validation metrics.
- Export trained networks to the workspace or to Simulink®.
- Generate MATLAB® code for building and training networks and create experiments for hyperparameter tuning using Experiment Manager.

Such a "No Code DL" environment will help the beginners to work on DL-based solutions, as there is no need of sound programming initially. The trained model can be exported and then can be used for further use in any application.

Courtesy:

(1) https://matlab.mathworks.com/

(2) https://in.mathworks.com/help/deeplearning/ref/deepnetworkdesigner-app.html

Publications at the Department

- **Rutul Patel, Vishvjit Thakar, Rutvij Joshi,** "Dictionary learning-based image super-resolution multimedia devices", Multimedia Tools and Applications (2022): 1-20.
- **Tanuj Gupta, Chetna C. Chauhan, Sher Singh Meena, Abhishek A. Gor, Ramavatar Meena, Ankit Singh, Rajshree B. Jotania,** "Influence of Sm and Cd co-substitutions on physical, magnetic, M¨ossbauer, electric, and dielectric properties of Co2X hexagonal ferrites in presence of a hematite phase", Ceramics International 48 (2022):36802–36813.
- **Nikunj Joshi, Ankur Pandya, P K Jha,** "Novel AgRhM2 (M =S, Se, Te) Chalcopyrites with superior optical properties and solar cell efficiencies", Optical Materials 132 (2022):112798.
- **Twinkle Bhavsar, Abhishek Jindal**, "On Reducing the Outage Probability in VFD-NOMA with Limited CSI at Source", IEEE Communications Letters (2022).
- **Saumil Desai, Ankur Pandya, Vipul Bhojawala, Prafulla K Jha,** "Theoretical Modelling of Graphene System for Nano-electromechanical Resonator and Force Sensor", Physica E: Low Dimensional Systems and Nanostructures 147 (2022):115606.
- **Sachin Gajjar,** "Design and Implementation of Fault Tolerance and Diagnosis Technique for Arithmetic Logic Unit (ALU) in Soft-Core Processor", Advances in VLSI and Embedded Systems, Springer (2022).
- **Dhaval Shah**, **Sachin Gajjar** "Exploration of FreeRTOS on a RISC-V Architecture", ICT Systems and Sustainability, Springer (2022).
- **Parthiv Bhau, Vijay Savani,** "A Low Power High Speed 15T FinFET-GDI based Hybrid Full Adder using 18nm Technology", Advances in VLSI, Communication, and Signal Processing, Springer (2022).
- **Manan Jain, Hardik Joshi, Vijay Savani,** "Modern Queue Management System for Various Government Jan Seva Ayog Centers", Algorithms for Intelligent Systems, Springer (2022).
- **Ashu Mittal, Nairit Joshi, Vijay Savani,** "Stock Price Prediction Using Machine Learning along with Web Interface (GUI)", Artificial Intelligence and Communication Technologies, SCRS book series (2022).
- **Sachin Gajjar,** "Survey of Data Processing Software Tools for Global Navigation Satellite System", Lecture Notes in Networks and Systems, Springer (2022).
- **Vishnudatta Indraganti, Anish Gupta and Rachna Sharma,** "Attitude Estimation of HAPs using Fused Global Positioning System and Inertial Navigation System," 8th International Conference on Signal Processing and Communication (ICSC), Noida, India, (2022).

Publications at the Department

- **Hardi Sangani, Usha Mehta,** "UVM based Verification of Read and Write Transactions in AXI4-Lite Protocol", TENSYMP2022 at IIT Bombay, (2022).
- **Mihir Rana, Nimit Malani, Ruchi Gajjar, Manish I. Patel, Dipesh Panchal,** "Automated Design Rule Checker for VLSI Circuits using Machine Learning", at International Conference on VLSI, Communication and Signal Processing MNNIT Allahabad, Prayagraj (U.P.), (2022).
- **Vaishali Dhare, Bhavsar Vishwam, Bhojwani Hemant,** "Logic Synthesis Method for Quantum-dot Cellular Automata Circuits", at TENCON 2022, Hong Kon, (2022).
- **Aravind Kannan, Aftaab Siddiqui, Ruchi Gajjar, Manish I. Patel, Dipesh Panchal,** "Aspect Ratio Estimation of a Two-Stage Operational Amplifier", at International Conference on VLSI, Communication and Signal Processing, MNNIT Allahabad, Prayagraj (U.P.), (2022).
- **Yash Jha, Harsh Prajapati, Bhupendra Fataniya,** "Real-Time Object Detection in Microscopic Image of Indian Herbal Plants using YOLOv5 on Jetson Nano", 2022 International Conference on Connected Systems & Intelligence (CSI) Trivandrum, India (2022).
- **Urmi Shah, Usha Mehta,** "Parametric Analysis and Fault Modeling of Next Generation High Speed Interconnects", 2nd IEEE Electron Device Kolkata Conference 2022 (EDKCON 2022) IEEE Electron Devices Society Kolkata Chapter (EDS), (2022).
- **Anisha Ahuja, Usha Mehta,** "Design and Simulation of Ultra-Low-Power Parallel Summation Logarithmic Amplifier", 2nd IEEE Electron Device Kolkata Conference 2022 (EDKCON 2022) IEEE Electron Devices Society Kolkata Chapter (EDS), (2022).
- **Deep Acharya, Usha Mehta,** "Performance Analysis of RTL to GDS-II Flow in Opensource Tool Qflow and Commercial Tool Cadence Encounter for Synchronous FIFO", 2nd IEEE Electron Device Kolkata Conference 2022 (EDKCON 2022) IEEE Electron Devices Society Kolkata Chapter (EDS), (2022).
- **Ayush Patel, Usha Mehta, Piyush Bhatasana,** "Low Power design and Analysis of 4 X 4 CMOS SRAM Array Differential Sense Amplifier", at International Conference on Microelectronics, Computing and Communication Systems (MCCS-2022) Indian Society of VLSI Education, Ranchi, (2022).
- **Damini Rathi, Aashvi Gajjar, Hardik Joshi,** "BER Performance Comparison of Gamma Gamma FSO link for Different Modulations and Diversity Techniques", 9th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON-2022) IIIT, Allahabad, (2022).
- **Akshat Jain and Rachna Sharma,** "Photo-detector Selection in Cascaded Vertical Underwater VLC System," 8th International Conference on Signal Processing and Communication (ICSC), Noida, India, (2022).

Technical Expert Sessions

1. Mr. Chetan Shingala, Software Engineering Director at Cadence Design Systems, India delivered a talk on "Semiconductor Industry Challenge and Computation Software - Transforming the Future" to the students of M.Tech. VLSI Design and Embedded Systems semester-I on November 14, 2022.

2. Prof. HS Jattana, Ex-Scientist, SCL Chandigarh, India delivered a talk on "CMOS IC Fabrication Process from Fab Perspective" to the students of M.Tech. VLSI Design semester-I on November 17, 2022.

3. Mr. Dipesh Panchal, Physical Design Engineer, eInfochips, India delivered a talk on "Design of Operational Amplifier" to the students of M.Tech. VLSI Design semester-I on November 19, 2022.

4. Mr. Dipesh Panchal, Physical Design Engineer, eInfochips, India delivered a talk on "VLSI Physical design: An Industry Perspective" to the students of M.Tech. VLSI Design semester-I on November 19, 2022.

5. Dr. Kiran Parmar, Ex-Professor & Head, LDCE, Ahmedabad, Ex-Dy Director, Technical Education Board delivered a talk on "Recent Research Trends in Digital Signal Processing and Applications" to the students of M.Tech. Embedded Systems semseter-I on November 24, 2022.

Glimpse of Events Organised at the Department

Short Term Training Program on Cyber Physical Systems

A two-week short term training program was conducted during July 4-15, 2022 by Electronics and Communication (EC) Engineering Department, Institute of Technology, Nirma University under the auspices of CQAAD, Nirma University. The program was technically co-sponsored by IEEE Communication Society (IEEE ComSoc) Gujarat chapter and IETE Ahmedabad. It was attended by 17 participants. The program was inaugurated at the hands of Dr. Anup Singh, Director general, Nirma University with a key note address delivered by Dr. Prabhat Ranjan, Vice Chancellor, D Y Patil International University, Pune.

A total of 27 technical sessions were conducted including some hands-on practice sessions out which 15 sessions were engaged by the external experts from premier academic institutions and industries. For the remaining 12 sessions faculty members from EC, CSE, EE, and EI departments were invited. The STTP introduced the basic fundamentals as well as advanced learnings related to Cyber Physical Systems. Additionally, two sessions were included on teaching-learning pedagogy namely paper setting based on outcome-based education and writing effective research proposal. It was a concluding valedictory function chaired by HoD EC and Program coordinator Dr. D K Kothari.

Glimpse of Events Organised at the Department

Hackathon 2022
Jointly Organized by ECE Department and eInfochips

Department of Electronics and Communication (EC) Engineering of Institute of Technology, Nirma University and eInfochips have jointly organized a Hackathon, sponsored by eInfochips. The two themes for Hackathon were 'Smart Transportation' and 'Smart Agriculture'. A total of 54 students participated in 20 different teams. As an activity of the hackathon all the registered participants visited eInfochips on July 27, 2022, where Mr. Anand Shah (Program Manager, eInfochips) and Mr. Sudhir Naik (Co-founder, eInfochips) addressed the participants and motivated them to submit and work on some ideas which are beneficial for society at large. Then after the participant teams submitted their ideas, and were scrutinized in two stages. An award ceremony was scheduled on September 9, 2022, during which three winner teams from both themes were announced. The award ceremony was graced by the presence of Dr. R N Patel, Director, Institute of Technology, Nirma University, Dr. Usha Mehta (HOD-EC), Mr. Anand Shah, Mr. Sudhir Naik and Mr. Nilesh Ranpura (ASIC Director, eInfochips) who distributed the certificates and awarded the winners.

Glimpse of Events Organised at the Department

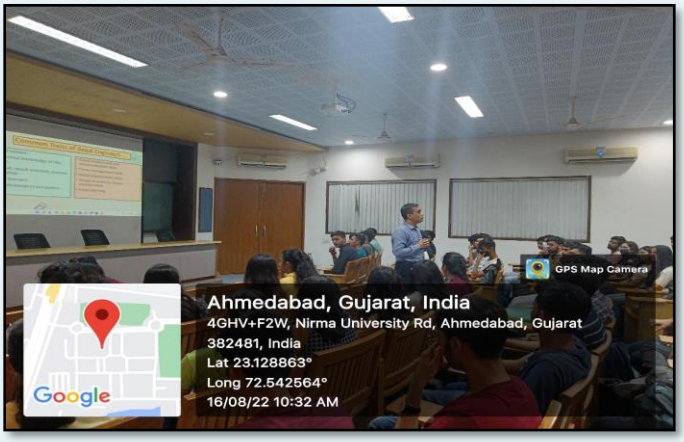
M. Tech. Orientation Programme

An orientation program for the newly admitted students in two PG programs of EC department - VLSI Design and Embedded Systems was organized during August 01-12, 2022. The program was inaugurated with the blessing from chief guest of the function Mr. Narottam Shahu, Advisor & Member Secretary, GUJCOST, Gandhinagar, and Executive Director of Gujarat Science City. Dr. R. N. Patel, Director, ITNU has also made the students aware about the Institute of Technology, Nirma University and the recent achievements. The inaugural session was followed by a session for the introduction to the department by the head of the department and introduction to the PG programs by the PG Coordinators. Then after well mixtures of different (technical, non-technical, spiritual and industrial visit) sessions were planned to ignite the young minds of newly admitted students for their new phase of learning.

Glimpse of Events Organised at the Department

B. Tech. Orientation Programme

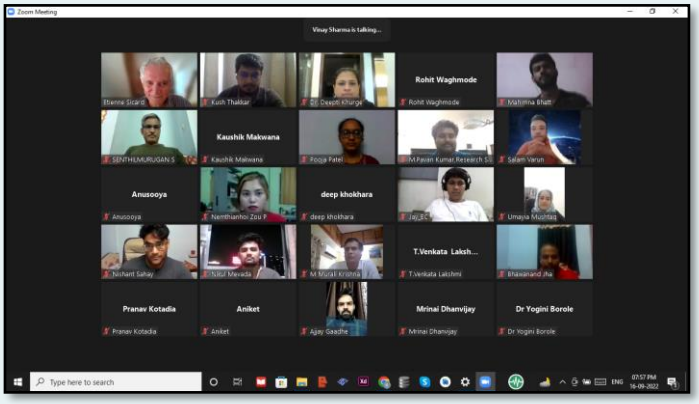
The Department of Electronics and Communication (EC) Engineering organized a one-day Orientation Programme for the students of B.Tech., Semester-III, V, and VII on August 16, 2022. The program was coordinated by Dr. Vaishali Dhare and HoD-EC. The program began with the welcoming of the students by HOD-EC. The Department e-newsletter was released by Dr. R. N. Patel, Director, IT-NU. He addressed the students of Semester-III. HoD-EC addressed the students and brief them about the academic disciples and regulatory norms to follow during this semester. It was followed by a session on ''Building Your Biodata'' by Dr. Dhaval Pujara, for creation of a professional resume. The second session was on "Career Planning" by Dr. Sachin Gajjar, Associate Professor, ECE Department, ITNU who demonstrated the Career Portal developed by his team. Third and fourth sessions were for semester-VII students. The third session was on "High-Speed Digital Board Design" by alumnus of ECE Department, Mr. Shiddharth Mistry, Founder Teq Diligent Product Solutions Pvt. Ltd. He focused on the high-speed boards requirements by the latest 5G technology. The fourth session was on "Using Design Thinking for Human Spaceflight" by Mr. Neel Mehta, CEO & Co-Founder, Studio Carbon. The speaker talked about the product design for brain sensors. The fifth session for semester-V students was on "Lessons beyond Syllabus" by Mr. Sanjay Chakraborty, Founder and Chief Marketing Communication Advisor, ESSKSEE The speaker shared his personal experiences to make aware and motivate the students in their corporate life.

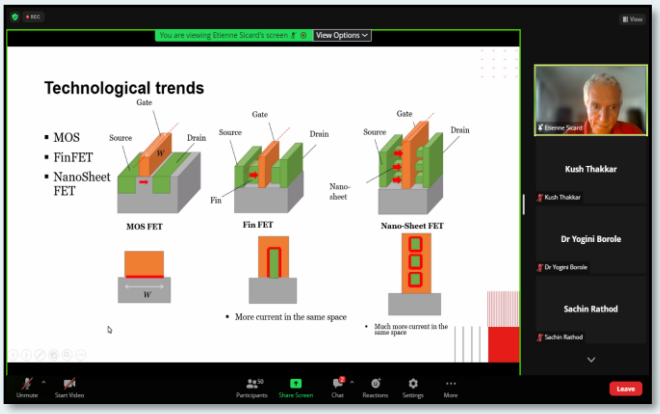


Glimpse of Events Organised at the Department

Workshop on "FinFET, Nano-Sheet Cell Design, Now & Road Ahead"

Department of Electronics and Communication (EC) Engineering organized a three-day workshop on "FinFET, Nano-Sheet Cell Design, Now & Road Ahead" during September 14-16, 2022 on current trend of the FinFET and future technology of Nano-Sheet Cell Design. It was coordinated by Dr. Amisha Naik, Associate Professor, ECE Department, ITNU. It was organized by Mr. Vinay Sharma from ni2design. It was delivered by Dr. Etienne Sicard. Dr. Etienne Sicard is a mentor and spirit behind the success of Microwind software. He is currently a professor at INSA of Toulouse, Department of Electrical and Computer Engineering. The first day focused on the introduction of Microwind 3.9 software to attendees and a hands-on exercise on the same. On the second day Dr. Etienne Sicard explained about the current advancement of the FinFET and how the transition of FinFET from MOS happened and also about the different technology from 45 nm, 14nm and 7nm. He also acknowledged the advantages and disadvantages of the current 5nm and 7nm technology FinFET. The final day of the workshop was focused on the innovative Nano-Sheet FET, the successor of MOS and FinFET, and its enhanced performances illustrated on inverters, ring oscillators, logic gates and memories. The workshop concluded with a final Q&A session.





Glimpse of Events Organised at the Department

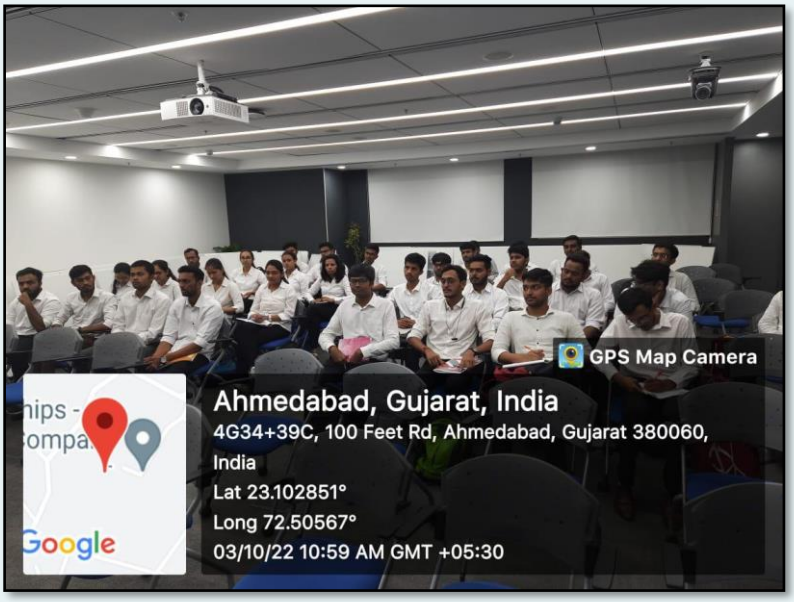
Industrial Visit for B. Tech. Students

The Department of Electronics and Communication (EC) Engineering organized industrial visits for the students of B. Tech. Semester-III and V. Semester-III students were taken to GELCO Electronics Pvt. Ltd. on September 29-30, 2022. The company is a manufacturer of quality electronic control measuring instruments and power-saving equipment. Students were able to understand the functioning and coordination of different departments of the industry. They were also informed about the entire step-wise manufacturing process and different manual and automatic equipment involved in the same. The students of Semester-V visited the Bhaskaracharya Institute of Space Application and Geo-Informatics - National (BISAG-N), Gandhinagar on September 27-28, 2022. BISAG offers a full range of specialised services in the areas of Ground Control Survey, GIS Database Design and Development, Map Creation/Updating and Finishing, along with education based telecasting services. The students visited different studios and control rooms meant for recording of educative sessions. Additionally, they also shown 3 small documentaries on workings and accomplishments of BISAG-N.

Glimpse of Events Organised at the Department

Industrial Visit for M. Tech. Students

Students of Semester-I, M. Tech., Department of Electronics and Communication (EC) Engineering visited eInfochips (An Arrow Electronics Company) on October 3, 2022. Students were briefed by Mr. Nirav Nanavati, Associate Director of Engineering in a technical session and discussed various projects on which the company has worked. Students also visited the Embedded Product Lab where all the projects that eInfochips had made or worked on were displayed. The hardware lab was also demonstrated to the attendees along with tools like High-Speed Oscilloscope and the Spectrum Analyzer.



Glimpse of Events Organised at the Department

Image Processing Project Exhibition

The Department of Electronics and Communication (EC) Engineering organized a project exhibition on November 28, 2022 where in the students of Semester-V enrolled in Image Processing Course exhibited various projects that included applications of image processing in day-to-day lives, phone apps, image enhancement, medical images, remote sensing, deep space observation, object detection and counting, applications related to color space transforms and some real world applications like number plate detection, traffic light management, seat belt detection, image, object dimension and area measurement, pattern detection and many more. The students had prepared a MATLAB app for their projects and gave a demonstration of their work to the audience.

Placements at a Glance

ARM Silicon Labs Synopsys Infineon Technologies Cadence Addverb Technologies TCS Digital

ZS Associates Cactus Communications HSBC Technology Crest Data Systems TCS Ninja Euler Motors Nervanik AI Labs

Media.net Northern Trust Musikaar Deloitte Morphle Labs Searce Logistics Arista Networks Zydus elnfochips

The Department of Electronics and Communication (EC) Engineering holds a consistent record for job placements in the course of B.Tech. and M.Tech. Every year, the department puts in committed efforts for placements and assures good offers from companies working in the files of core EC engineering, as well as IT field as well. The Placement Team of the department works together with the III Cell of the Nirma University, to ensure effective placement process. The faculty members also help the department in enhancing the placement drive every year.

To have smooth communication between the department, companies, and the placement cell, and also to involve students to manage the placement process, the department appoints a Student Placement Coordinator, who will guide his/her peers in the placement process. The students also get good guidance from their seniors through events like Placement Mantra, in which the seniors share their experiences about the company placements. The department also focuses on project and outcome-based learning, and on this basis, students get a chance to work in prestigious research organizations or companies, on various projects, for the well-defined last semester internship. This is followed by placement with a nice package as well as the learning that the company imparts to the fresher students. Some of the prominent companies are listed on the borders of this placement page, in which the majority of the EC students are placed during the placement drive of the year 2022-23.

Amazon Deutsche Bank Oracle Bosch Cadence Ubisoft Reliance - Fynd Greenvolt Mobility

Placements at a Glance

Ishika Agarwal
Amazon

Lalit Jetwani
Silicon Labs

Ishika Saijwal
Silicon Labs

Maheevatsa Rai
Deutsche Bank

Aakarshak Nandwani
Synopsys

Vanshika Gupta
Synopsys

Rutul Gandhi
Synopsys

Krishna Thakkar
Synopsys

Dhwanil Sukhadia
Synopsys

Vraj Patel
Synopsys

Divyam Pandya
Synopsys

Nirav Bhanderi
Synopsys

Mukesh Rangwani
Oracle

Tejas Deshpande
Oracle

Gaurang Maheshwari
Bosch

Meet Thakar
Infineon Technologies

Barun Debnath
Media.net

Yashasvi Patel
Northern Trust

Abhishek Zinzuvadiya
Cadence

Mohit Agarwal
Cadence

Placements at a Glance

Manasi Yadav
Cadence

Kartikey Mishra
Addverb Technologies

Aastha Panchal
ARM

Aditya R
Addverb Technologies

Avi Nawal
ARM

Dev Patwa
Searce Logistics

Palak Jain
Deloitte

Taneesha Chaudhary
Deloitte

Abhay Shah
Cactus Communications

Pranjal Singh
Searce Logistics

Jainil Raval
HSBC Technology

Nikhil Gupta
HSBC Technology

Krupa Lakhani
ZS Associates

Shaily Hirani
ZS Associates

Rinkal Jain
Greenvolt Mobility

Yuvrajsinh Parmar
Crest Data Systems

Dhruvit Tripathi
Crest Data Systems

Yash Gandhi
Crest Data Systems

Kanak Tekwani
State Street Corporation

Himanshu Nakrani
State Street Corporation

Placements at a Glance

Tanmay Parekh
Euler Motors

Harsh Panara
Greenvolt Mobility

Prince Bansal
Tata Motors

Shivangi Dhamecha
Tata Motors

Dhvanil Chauhan
Nervanik AI Labs

Harsh Ahuja
Deloitte

Rishita Chaliwala
Deloitte

Upamanyu Dixit
Zydus Life Science

Yash Thakkar
eInfochips

Jaineel Modi
eInfochips

Nimit Malani
eInfochips

Shyam Manvar
eInfochips

Hetvi Patel
ARM

Anish Gupta
Reliance-Fynd

Pallavi Kumari
Cadence

Akshat Jain
Ubisoft

Nisha Chaudhary
Morhle Labs

Darsh Maniar
KPMG

Rythem Mehta
KPMG

Yashkumar Sanghani
Greenvolt Mobility

Placements at a Glance

Naman Deo
Zeus Learning

Khush Shah
Crest Data Systems

Safvan Mansuri
Crest Data Systems

Yash Raval
Crest Data Systems

Ayush Tiwari
Crest Data Systems

Jatin Sangai
Crest Data Systems

Ravikumar Makwana
Crest Data Systems

Aakash Parmar
Monarch Innovation

Mihir Rana
TCS Digital

Jugal Patel
TCS Ninja

Dhairya Kachhy
TCS Ninja

Nisarg Vyas
TCS Ninja

Het Patel
eInfochips

Parikshit Patel
eInfochips

Sneh Patel
eInfochips

Chaitanya Chhichhia
TCS Digital

Hardikkumar Chaudhary
Crest Data Systems

Shivaditya Chhaparwal
Musikaar

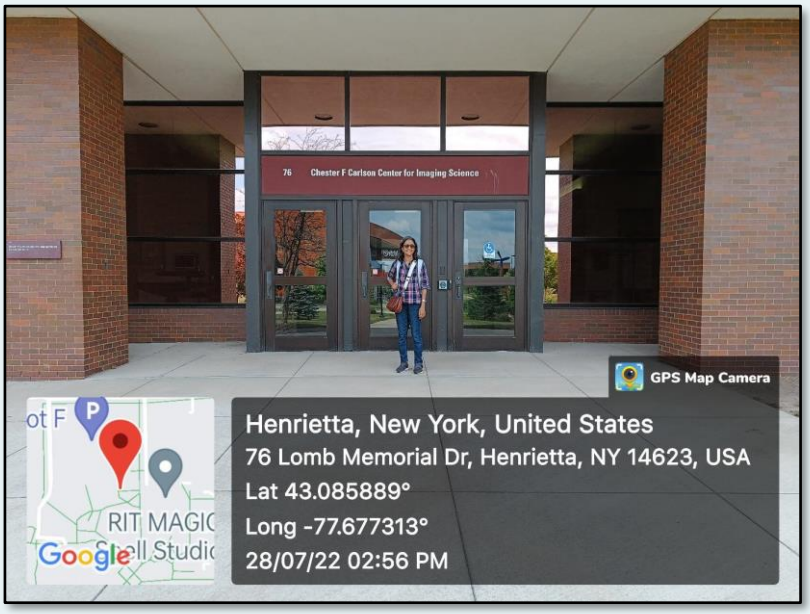
Digvijaysinh Chudasama
Arista Networks

Tanisha Mittal
Arista Networks

International Exposure by the Department

Dr. Ruchi Gajjar, Assistant Professor in EC Department was invited as a Visiting Research Scholar at Rochester Institute of Technology (RIT), New York, USA in the summer of 2022, to carry out collaborative research in imaging science. The duration of the research work was of 6 weeks, from June 15, 2022 to July 29, 2022 where she collaborated with Dr. Jan van Aardt and his team at the Digital Imaging and Remote Sensing Group (DIRS), Chester F. Carlson Center for Imaging Science at RIT.

She actively collaborated on projects involving yield prediction via unmanned aerial systems (UAS), crop disease prediction using UAS imagery; and mapping of vine nutrient status via remote sensing technology



Activity at the Alumni Sponsored Lab

The Department of Electronics & Communication (EC) Engineering organised Alumni expert lecture on "Learning Compliant Object Insertion" delivered by Dr. Samarth Brahmbhatt, research scientist at Intel Labs in California, USA. The lecture was held on August 05, 2022 from 11.00 am to 12.00 pm on D-310 room for the BTech EC and MTech EC (Embedded Systems) students. The session had over more than 30 participants including students and faculties.

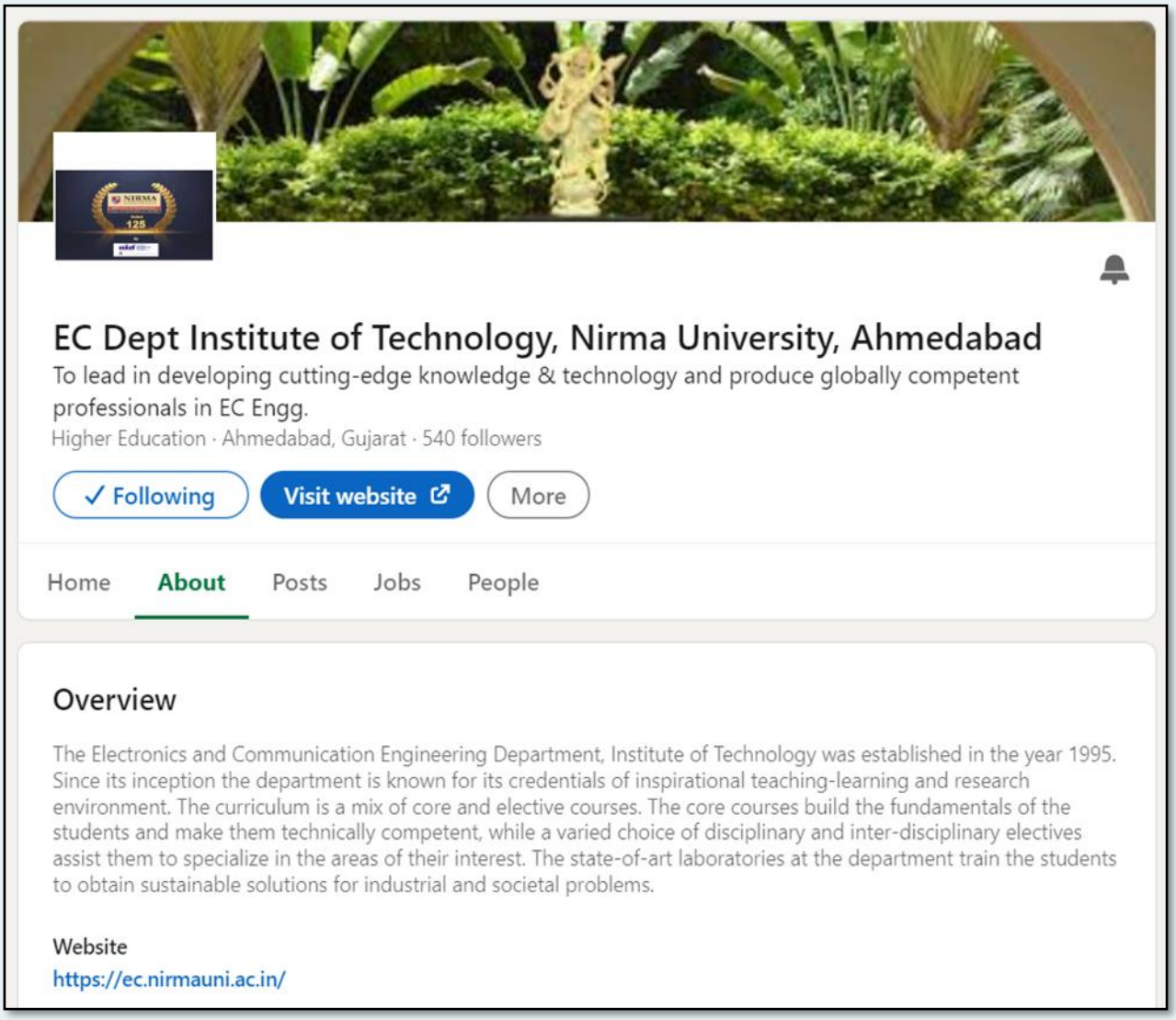
The topics covered in the session were: a robot manipulation algorithm for inserting objects into tight locations e.g. plate into the slot of a plate holder. The algorithm was trained completely in simulation with reinforcement learning (RL), and deployed to a real robot. He also talked about the basics of RL and how to train an RL policy in simulation and deploy it in the real world. Towards the end, he talked about the Nirma alumni-sponsored robotics lab.. The lecture was quite interesting and interactive.

New Initiative by the Department

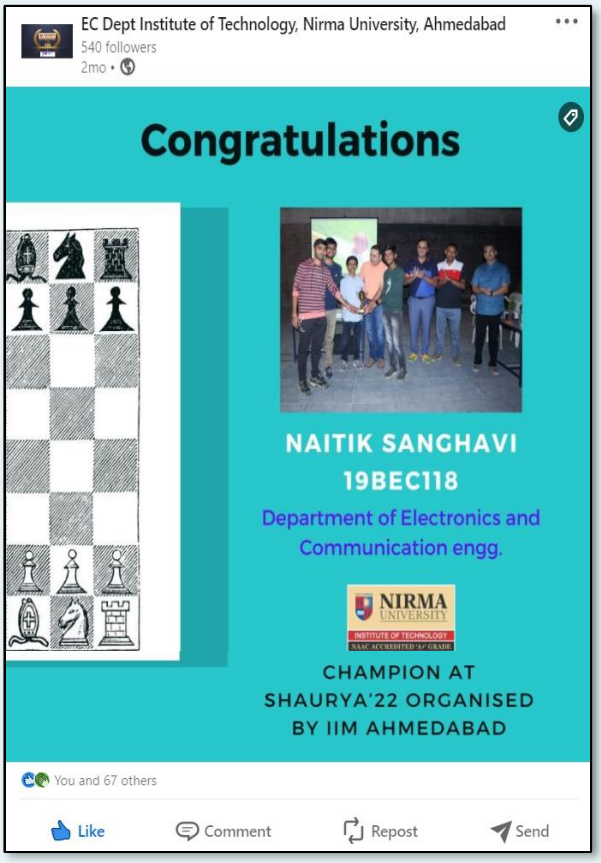
Department of Electronics and Communication Engineering has created LinkedIn Profile and then a LinkedIn Page for the department, in mid of October 2022. The main purpose is to showcase the achievements of the students and different activities under the department to the outer world.

- The link for profile is:
https://www.linkedin.com/in/ec-dept-institute-of-technology-nirma-university-b82538253/
- The link for page is:
https://www.linkedin.com/company/ec-it-nu/

During the short span, good response is observed from the students, alumni, colleagues and other stack holders.



New Initiative by the Department



Faculty Industry Interaction

The Faculty of Electronics and Communication (EC) Engineering department, Institute of Technology, Nirma University visited top core industries at Bangalore (Intel, Infineon, Synopsys, Bosch, Marvel) and Pune including Institute-Industry interaction, watched ongoing student project progress and met alumnus and the students. Also, it continues industry interaction with Salesforce, Infineon & Astrome. The most exciting part of the visit is Alumni meeting in Bangalore, where alumnus cherished their memories with Nirma.

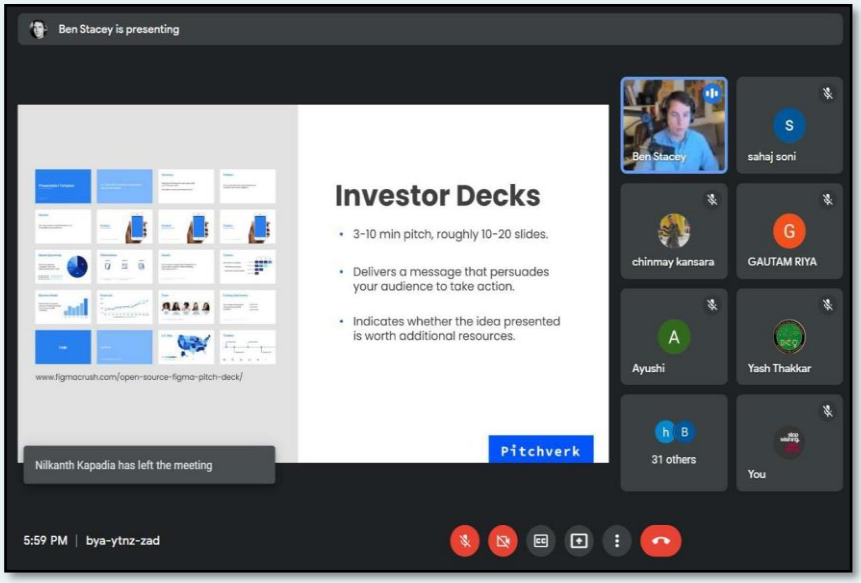
Faculty Industry Interaction

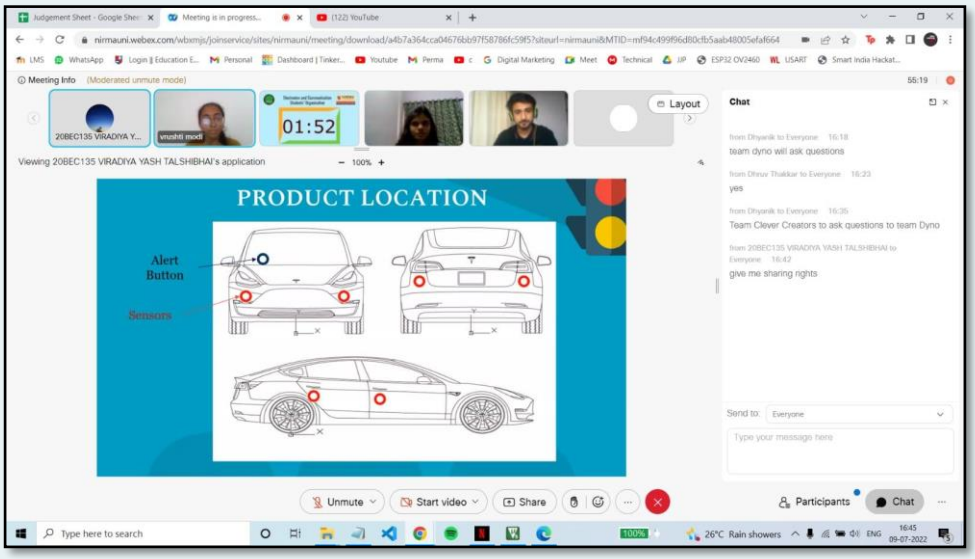
Faculty Industry Interaction

The Semicon conference was organized by India Semiconductor mission with an aim to make India a global hub for semiconductor design, manufacturing and technology development. In this conference senior professors of ECE department have actively participated along with M.Tech. students. SEMICON 2022 was launched with the theme to catalyze India's Semiconductor ecosystem, with a vision to position India on the semiconductor map of the world and build a vibrant semiconductor innovation and manufacturing ecosystem.

Mix and Match

The Electronics and Communication Students' Organisation (ECO) organized an online event, "Mix and Match" from July 5-9, 2022. The event featured two rounds and an expert session led by Canadian entrepreneur Benjamin Stacey. The session's main emphasis was on how to deliver an effective pitch deck. The expert emphasized the value of networking, a compelling presentation, and strategies for distinguishing out from the throng, which was very insightful for the audience. The event continued with the first round of the competition, which was an eliminator round where the teams had to select an existing statement and merge two existing products to solve that problem. The second round was a live pitching round in which the teams had to give a sales pitch of the product they had selected in round 1, to the judges. The top two teams were rewarded with exciting cash prizes for their efforts and skill.





Code Cook

The Electronics and Communication Students' Organisation (ECO) organised a programming event named "Code Cook" on July 17, 2022, from 12:00 pm to 02:00 pm on an online platform Codeforces. More than 30 students from various branches of first and second year of the Institute of Technology participated in the event. This competition was designed to promote the importance of coding among young minds and instill in them the habit of developing strong analytical skills and logical problem-solving skills for further application in programming. The event was preceded by an online session through which the participants were habituated with the interface of Codeforces platform. Winners were awarded with exciting prizes to acknowledge their excellent skills and efforts.

Sweet Distribution

The Electronics and Communication Students' Organisation (ECO) organized the Sweet Distribution Ceremony on October 20, 2022 for all the non-staff working members of Nirma University on the occasion of Diwali. The honorable Director of the Institute of Technology Nirma University, Dr. Rajesh Patel, and the Head of the Electronics and Communication (EC) Engineering Department, Dr. Usha Mehta participated enthusiastically along with the teaching staff, ECO board members, and the students to distribute sweets and warm greetings to non-staff members from across departments including hostels, garden labour as well as the security personnel.

Who's Next?: ITNU's Got Talent

The Electronics and Communication Students' Organisation (ECO) organised a Talent Hunt Contest named "Who's Next? - ITNU's Got Talent" on December 13, 2022 from 04:00 pm to 06:00 pm in C-Auditorium Nirma University. This competition was held exclusively for the first-year students of ITNU to showcase their unique talents and bag some exciting prizes. A total of 23 teams participated in the event. The event commenced with Team ECO welcoming the judges Ms. Shreya Pota, who is one of the most appreciated classical dancers and teachers at Jhunkaar Kathak Dance Academy and Mr. Kaushal Yagnik, who is a renowned flautist, followed by the teams' performances. Prizes were awarded for Dancing, Singing, open category as well as for the best branch. The event concluded with announcing the winners and a farewell to Team ECO 2022.

Articles

Shut up, Shut up I am busy!

Arya Tripathi
(20BEC130)

On the night of April 14, 1912, when the RMS Titanic struck an iceberg, there was another ship only 37 km away which could have made it in time to save the passengers of the Titanic. The Ship was SS Californian which issued the last iceberg warning an hour before the collision. However, after issuing the warning, the radio operator on the Californian ship switched off the radio. The Californian ship had laid off for the night, seeing the ocean filled with ice. The next morning, when the radio was switched on, SOS calls from Titanic were received. The ship reached the site but it was too late by then. The Titanic was outfitted with a radio room and a Marconi wireless telegraph system machine that allowed passengers to send messages while at sea. Marconi's technology monopoly and the torrent of personal messages conveyed through Titanic's telegraph proved fatal on that April night. The chief telegraph was so overwhelmed by a queue of incoming and outgoing guest telegrams. So, the story of the infamous wireless exchange goes like this:

Its April 13, 1912 the Titanic is en oute to New York City on her maiden voyage when her wireless system breaks down. For the two young Marconi-employed operators, chief telegraphist Jack Phillips and his assistant Harold Bride, this is a disappointment as there is a mountain of messages that passengers are hoping to send to friends and loved ones waiting for them across the sea and there is no way to send them. According to the Marconi manuals, the operators were not to attempt repairs at sea and they should leave it and wait to dock in New York so an accredited Marconi technician could fix it up. Philips ignores this and fixes it himself and he does this through his off shift and by the next day the Marconi system was back up and running. By now, the mountain of passenger messages was huge so Philips and Bride worked hard to transmit as many messages as they could. Just after 11:00 pm, Philips was busy transmitting to cape race so the signal was fairly weak and Philips had the settings cranked to high power so he could pick up the faint response. Californian cut in with a quick note saying - 'I say the old man stopped and surrounded by ice'. The Californian was the closest ship; therefore, her signal came in louder than the others. The sound of this interjection burst through Phillips's headset and he quickly fired back a legendary response. 'Shut up, shut up I am busy! I am working Cape race'. This rude response encouraged Californian's wireless operator Cyril Evans to dejectedly turn off his set and go to bed. Many have allotted Phillips a portion of the blame for the lives lost in the disaster because of this as he arrogantly ignored the warning. The crew was arrogant having the notion that their ship is unsinkable. But it can't be ignored that Phillips actually saved a lot of lives by having disregarded the rules about repairing the Marconi set.

Articles

Deblurring Motion-blur images

Aaditya Darakh
(20BEC001)

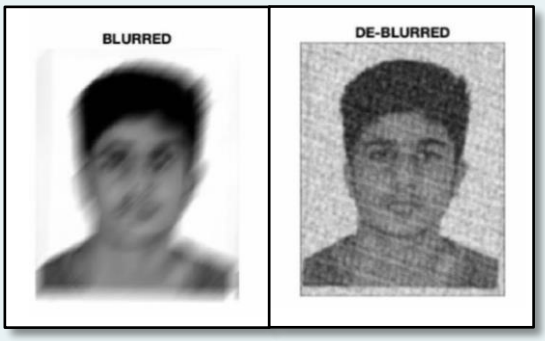
Motion blur is the most frequent type of image deterioration when taking pictures with handheld cameras. When the camera and the item being captured move in relation to one another during the exposure time, motion blur results. The point spread function (PSF) is convolved with the original image to produce a motion-blurred image. The original image can be easily recovered from the blurred one if the blur kernel, or PSF, is known beforehand. PSF consists of the angle and the length of the motion blur. An accurate estimation of these 2 parameters will give us the PSF. However, in the blind deconvolution issue, both the blur kernel and the original image must be estimated from a single blurred image because both unknowns are unknown.

Steps to find the **angle** of motion blur:

- Convert rgb to gray
- Take the **Fourier Transform**
- Perform **radon transform** on the spectrum of the image
- Threshold using **canny**(t=0.1)
- Calculate the variance of every column
- **Index** of the max value is the **angle**

Steps to find the **length** of motion blur:

- Rotate the **spectrum** of the image by angle
- Take the **mean** of every column (2d to 1d)
- Perform **Inverse Fourier Transform**
- Plot the real part of the data
- The value of **the first negative** peak is the **length**



There are various ways to correctly predict the angle and length of the image, in this article the method for angle estimation has an accuracy of 97.3% for values of L>10 and about 93% for L<10. One more method could be by using the Radon transform of the image. In this transform the specified values are the downturn of the sinc function and have the least values, we can clearly see that the y-coordinate of all of these values is the same, considering that the length of the blur is the same. and we have varied the angle from 15-100 degrees. From this, we can effectively calculate the motion blur of the image.

Paintings

Palak Naik
20BEC077

Shimoly Shah
22BEC114

Yash Viradiya
20BEC135

Paintings

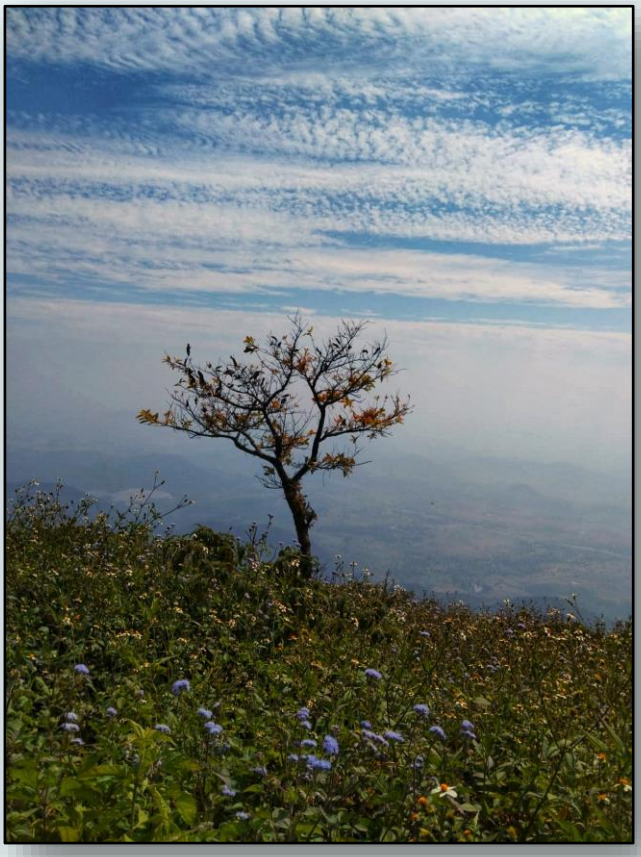
Vatsal Thakor
22BEC141

Veer Mukadam
22BEC142

Photography

Neel Patel 22BEC076

Prasham Doshi 22BEC097

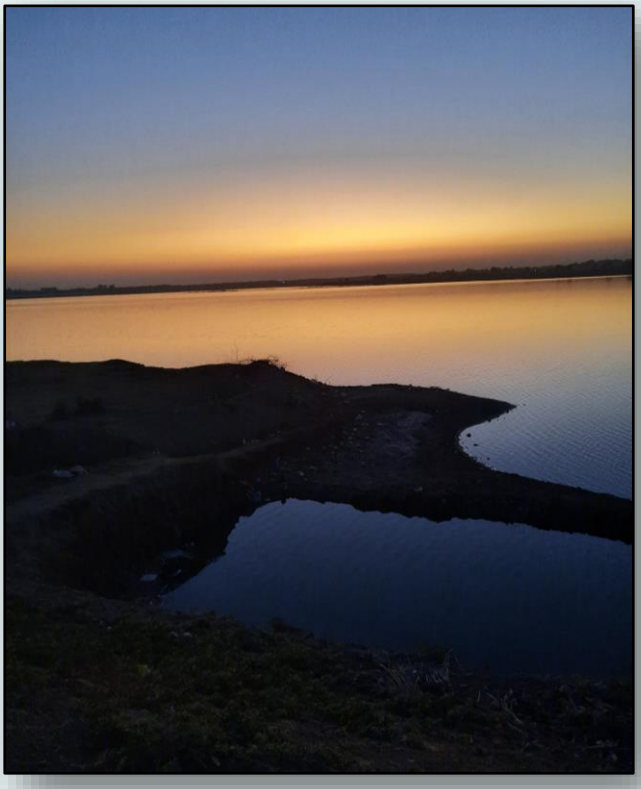


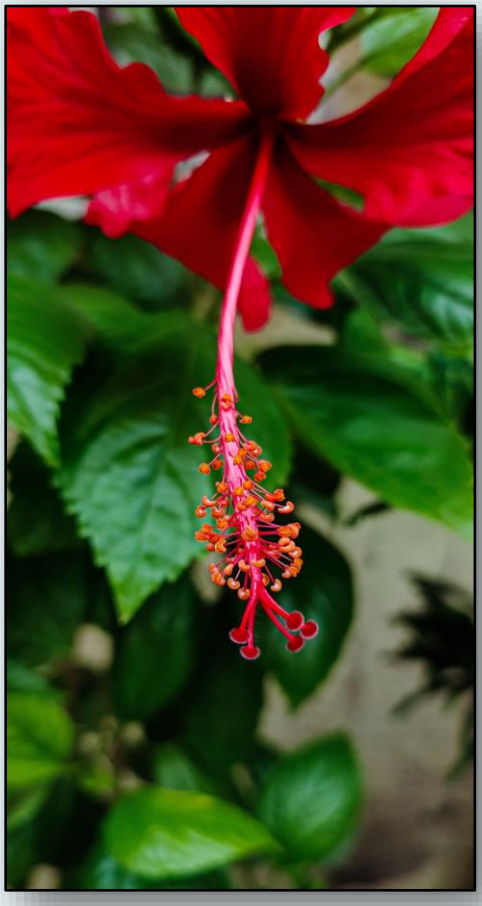
Diya Thakkar 22BEC039

Photography

Dhyan Thakkar 20BEC027

Vardan Chetnani 20BEC019





Yash Viradiya 20BEC135

Poetry

The Art

You walked in the white room to
Find me in violet bruises,
Handed-down fabric and worn out
Plater. Passersby were pitiful,
But your feet and feelings froze.

You name it art.
Is art as helpless as a woman cornered in an alley?

You tried to blend in a plethora of shades and strokes
That adorned the curves
Of my smile and glorified the
Silhouette of in my eyes.
A mosaic of imperfections,
But you stood by.

The art breathed lively.
Is art an enchanting as stare on a gloomy new moon night?

You gazed at the beauty of
The mess you made with those
Admiring tears as the
World burned the galleries outside,
In the fires of Tartarus. Colours
Blazed, screaming in agony
But didn't fade.

The art gasped for a breath.
Is art as suffocating as a promise to
A dying mother?

The graphite lines left
Imprints of stories long-buried.
The flames were quicker than
The dawned realization of fear and
Departure. I watched you burn while
You waved me a goodbye that blurred
To the mere smoke of grief.

The art was left as the memoir of pain.
Is art as cryptic as a sunken ship of nostalgia
In an ocean unexplored?

- Mahek Shah (22BEC071)

Poetry

Nature

Son to mother nature.
Enveloped in fog,
Concealed in white blanket,
Oh! What a beauty.
The scene which eyes captured,
Oh! No photo could describe it
Little yellow rays on the white sheets left me bewildered
Oh! The scenic beauty filled my heart with colours

Daughter to mother nature
'Teesta' it was,
Oh! A sight to behold.
Engulfing the rocks and falling from heights,
Oh! So Enlightened I am.
To never give up on life I learnt
Oh! Along with eternal peace it's melody bought.

- Harshita Jain (21BEC042)

Poetry

Dreams

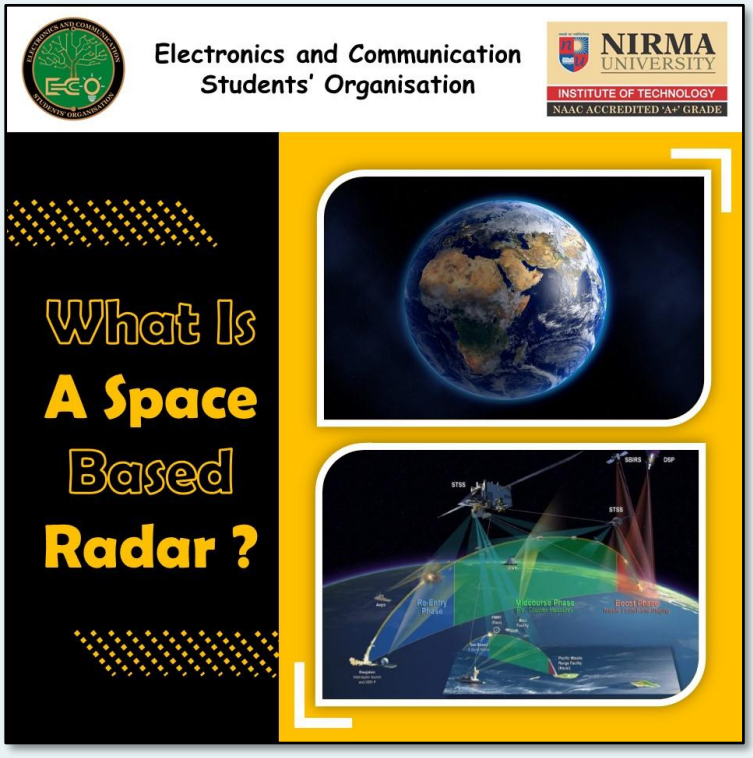
I feel tired...and want to stop.
And then I see the world marching at a constant speed.

Artists throwing sensational and depression that makes an art ...THE ART.
I'm scared!

Then from the other end, my dreams look at me.
With a dead stare.
I feel Dreams will always bother a so-called normal life.
Even after death, the broken dream will chase you.
They are so persistent to happen.
To see how absurdly alive they'll look in this marching world.
Every night in the devil's hour,
I desire to be that Dream.
That persistent.
That broken.

- Devang Bathwar (20BEC016)

The Insta - Techies



Follow ECO on Instagram: www.instagram.com/eco.itnu/

Students' Achievements

- Panara Harsh (19BEC083), Vraj Modi (21BEC069), Arpan Srivastav (21BEC011), Ashutosh Tiwari (21BEC127) and Utkarsh Maheshwari (21BEC129) won the award for the best manual flight as a part of TEAM ARROW in "Aerothon - Unmanned Aerial vehicle drone design, build and fly challenge 2022" organized by SAE INDIA.
- The team stood at 6th position overall with 2 awards in the "Aero Design Challenge" conducted by SAE INDIA, Southern section.

- Naitik Sanghvi (19BEC118) and Chintan Trivedi (21BEC128) were the winners in Chess event at CONCOURS 2022 organized by DAIICT and won in the chess event "SHAURYA 2022" organized by IIM Ahmedabad.
- Parth Parikh (20BEC081) was the winner in Badminton event at CONCOURS 2022 organized by DAIICT and secured runners-up position at "SHAURYA 2022" badminton tournament organized by IIM Ahmedabad.

- Raj Nirmal (20BEC075) secured 2nd rank in Mixed Signal SoC design Marathon using eSim & SKY130 conducted by FOSSEE Project, IIT Bombay in association with VLSI system design Corp. Pvt. Ltd. and Google Open Source.
- Yash Viradiya (20BEC135), Niharika Thakar (20BEC128), Devesh Pareek (20BEC023) and Pranshu Bansal (20BEC096) secured 1st position in a Hackathon organized by ECE Department, Nirma University, Ahmedabad and eInfochips, Ahmedabad.
- Dishank Garg (20BEC030) secured 3rd position in a Hackathon organized by ECE Department, Nirma University, Ahmedabad and eInfochips, Ahmedabad.

Prevoyance 2022

The Electronics and Communication Students' Organisation (ECO) organised a two-day Techno-Cultural fest named "Prevoyance – Into the Future" on September 23-24, 2022 from 09:00 am to 06:00 pm at Nirma University, Ahmedabad. The inauguration ceremony of the fest took place in A-101 Auditorium at Nirma University and was inaugurated by the Honorable Chief Guest, Dr. Sudhir Naik, Founder Chairman, India Electronics and Semiconductor Association, Gujarat Chapter and Founder Member eInfochips.

The fest focused on fun and learning to keep the participants up to date with various technologies and skills and provide them with a platform to present their ideas. More than 900 students from various universities in India like GEC Patan, LDCE, PDEU, Ganpat University, etc. participated in this fest. The fest organized 14 events and a workshop comprising multiple technical and non-technical events with exciting prizes. There was a traditional day celebration as well on the second day of the fest.

Prevoyance 2022

Many of the faculty members from the ECE department, institute and university were invited as a judge in various events. In a few events like Talent Hunt and Business Empire, the judges were invited from outside Nirma University for insights into their expertise. All events concluded with insights and closing remarks from the judges leaving the students inspired and excited for future events and opportunities.

Different events held are as follows:.

- **Code to Conquer:**

This was a coding event where students were given a coding problem. They will write a code, and the winner is decided by the online coding tool by checking the performance of the code. It was conducted at the Nirma University campus on September 23, 2022, from 11:00 am to 02:00 pm.

- **No Code ML:**

It is an event to implement solutions using machine learning without coding. Dr. Ruchi Gajjar, Assistant professor, ECE department, ITNU was judge in this event. A total of seven teams participated. . It was conducted at the Nirma University campus on September 24, 2022, from 09:00 am to 01:00 pm.

- **Battle of Bids:**

There were different tasks at 2 levels. Each team had to win a topic of their choice in the form of an auction by bidding from the given number of tokens for each level. It was held on September 23, 2022 from 11:00 am to 02:00 pm at Nirma University. It was judged by Dr. Akash Joshi, assistant professor at the department of humanities and Social Sciences, Nirma University.

- **Project Exhibition:**

Total of seven teams have presented their projects. Dr. Manish Patel, Assistant professor, ECE department, ITNU, was a judge in the event.

Prevoyance 2022

- **Robotronics Workshop and Robo Race:**

The 4-hour workshop on robotronics was conducted on September 23, 2022 from 02:00 pm to 06:00 pm and the kits were provided by the Prevoyance team. There were about 100 students who has registered. After the workshop, students were offered to participate in the Robo Race event scheduled on September 24, 2022. The second phase of the workshop which was exclusively for the first year students was conducted on November 05, 2022. 8 out of 10 teams of phase two had successfully built the robot.

- **Mad Ads:**

The event was scheduled on September 23, 2022 from 02:00 pm to 06:00 pm. In this event participants were asked to present a small creative video advertisement. Total 15 participants has registered.

- **ECE Students of the Year:**

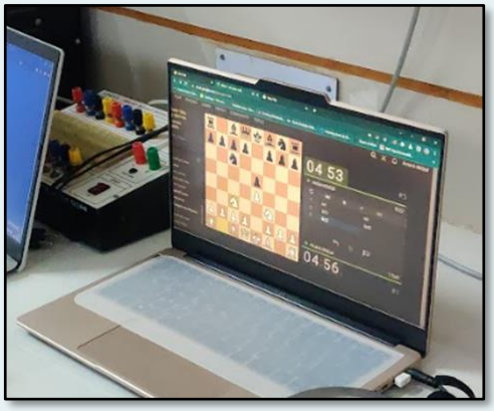
It was a mixed event containing technical and sports activities. The event consisted of three rounds. The event was organized during September 23, 2022 from 11:00 am to 01:00 pm.

- **Court Room:**

The event was scheduled on 02:00 pm to 06:00 pm on September 23, 2022. It was all about discussing a case study and providing solution. Its all about human interaction, conflict, argument, and debate. A total of 38 teams have registered.

- **Chess:**

It was held on September 24, 2022 from 11:00 am to 02:00 pm at Nirma University. It was an online chess event organized on the lichess chess platform along with Webex and google meet for anti-cheating purposes. There was a total of 110 registrations for the events in which 63 participated in the event.



- **Quizzard:**

The Quizzard event was organized in two parallel sessions. One for the electronics quiz and the other for the general quiz. It was held on September 24, 2022 from 01:00 pm to 03:00 pm at Nirma University. There was a participation of 13 teams.

- **Business Empire:**

In this event, a team of participants was asked to present a case study of some business giants like Nokia, Microsoft, Apple, etc. It was a 2-stage competition. A total of 32 team has registered.

- **Valorant:**

It was held on September 23-24, 2022 at Nirma University. It was an online event organized on the Valorant platform. There were more than 50 registrations including team and individual participation.

- **Tug of War:**

The event was organized at the cricket groud. A total 26 teams has participated. Each team has five members. It was held on September 23, 2022 from 04:00 pm to 06:00 pm at Nirma University. There were 3 rounds in the tug of war. The event had over 24 teams and more than 120 participants.

- **Talent Hunt:**

A total of 26 participants have presented their talent in dance, instrument playing, singing, gazal, poetry, etc. A huge audience appreciated the event performance. It was held on September 24, 2022 from 03:00 pm to 06:00 pm at Nirma University. There were more than 30 Participations.

Upcoming Events by the ECO

The Electronics and Communication Students' Organisation (ECO) has been actively working for the development of the student community. The organization has worked throughout the year for the betterment of the students. In the past, ECO had organized various technical and non-technical events, webinars, and interactive sessions with the student community for the overall growth of the students and to bring out the most from them. To continue the tradition of learning and development the team ECO wishes to put forward some tentative Upcoming Events for the students.

Placement Mantra

Placement Mantra is an event for all the semester-IV and semester-VI students of the Electronics and Communication (EC) Engineering branch in which there will be a one - hour session, on various domains and the students will get information about placement opportunities, internships, and abroad studies. It will be held in March. It is an interactive session cum event where the students will also be given time to ask questions regarding placements, internships and abroad studies.

Hardware Workshop

Workshop based on Electronic subjects such as Microcontroller, FPGA etc. This workshop will be taken by Hardware experts. To perform, students will be provided if possible. It will be very useful and guiding session for the students interested in the hardware domain.

Upcoming Events by the ECO

Prevoyance 2.0

Prevoyance 2.0 is another flagship event of the Electronics and Communication Students' Organisation (ECO). It will be a 2-3 days long Techno-Management event for all the students of all the universities of India as well as all the faculties of Nirma University. The Prevoyance 2.0 will be kind of like a fest and the students will decorate the whole campus. The fest will consist of various events like Technical, Non-Technical events as well as workshops and webinars where the students of any discipline irrespective of year of study can participate, enjoy and grow their inner skills.

Code Cook

Code Cook will be an online Coding Event for all the freshers and sophomores of the Institute of Technology. It will be composed of one round only with five to seven questions of different difficulty levels. This will be a great opportunity for all the coding experts of the college to perform their best, use their logic and skills to solve the questions as early as possible. The participants completing all the questions first will be declared as the winner and cash prizes will be awarded to all the winners.

ECE Student of The Year

ECE Student of the Year is a very interesting event for the EC Students. In this Students were given different task to perform. It would have multiple stage task. The student from every year can participate in this event. The task swill provided to the students on the spot only. The student completing the tasks perfectly will be declared as ECE Student of the Year.

Upcoming Events by the ECO

Quiz Carnival / Treasure Hunt

A Carnival/Treasure Hunt game in which clues will be provided to the students. The clues will be based on Electronic riddles in form of codes/equations. Each clue will lead to the next clue which will lead to the ultimate Treasure. Also, there will be stages for the clues which will guide you to reach the final position.

Project Exhibition

Project Exhibition will be a platform where students can showcase their projects apart from the curriculum project they have performed and can win prizes based on that. This is the opportunity for the students where they can exhibit their knowledge and present in front of other students their innovative ideas and implementation of idea in form of projects.

Image Courtesy:

Vision & Mission - Manav Chokshi (Roll No.: 19BEC068)

Preface - Manav Chokshi (Roll No.: 19BEC068)

Placements at the Department - Dhyan Thakkar (Roll No.: 20BEC027)

Poetry - The Art - Prasham Doshi (Roll No.: 22BEC097)

Poetry - Nature - Yash Viradiya (Roll No.: 20BEC135)

Poetry - Dreams - Dhyan Thakkar (Roll No.: 20BEC027)

Back Cover - Yash Viradiya (Roll No.: 20BEC135)

ECO Website:

The Electronics and Communication Students' Organisation (ECO) has its official website which contains details of ECO, glimpses of events, ECO board members, etc.
Visit the link to explore more: https://eco-itnu.me/

Design Team

Yash Viradiya
(20BEC135)

Umang Parmar
(20BEC132)

Harshesh Shah
(20BEC111)

Palak Naik
(20BEC077)

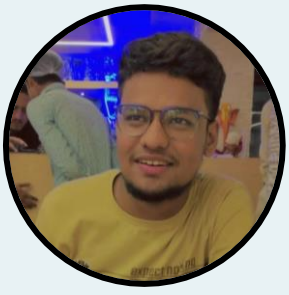
Yash Purohit
(20BEC137)

Darshi Khalasi
(20BEC056)

Palak Kapuriya
(20BEC076)

Vedanti Patel
(21BEC095)

Pankti Hedau
(21BEC044)



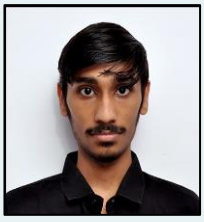
Burhanuddin Sabuwala
(21BEC108)

Down the Memory Lane - B.Tech. ECE Batch 2019-23

Down the Memory Lane - B.Tech. ECE Batch 2019-23

Team ECO 2022

President
Harsh Panara
(19BEC083)



Treasurer
Pallav Rathod
(19BEC106)

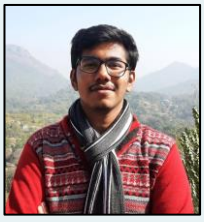
General Secretary
Naitik Sanghavi
(19BEC118)

Organising Secretary
Anushree Pachegaokar
(19BEC080)

Graphics Head
Harsh Anand
(19BEC010)

Graphics Head
Rutul Gandhi
(19BEC033)

Graphics Head
Sneh Kriplani
(19BEC055)



Cultural Head
Akshat Muke
(19BEC009)

Cultural Head
Vanshika Gupta
(19BEC143)

Social Media Head
Rythem Mehta
(19BEC114)

Public Relation Officer
Saloni Vaghela
(19BEC142)

Public Relation Officer
Ketul Mehta
(19BEC053)

Editorial Head
Rishita Chaliawala
(19BEC113)

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Abhishek Zinzuvadiya
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Upamanyu Dixit
(19BEC140)

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Yash Thakkar
(19BEC137)

Technical Head
Digvijaysinh Chudasama
(19BEC029)

Technical Head
Ishika Saijwal
(19BEC042)

Technical Head
Lalit Jetwani
(19BEC047)

Social Media Head
Keyuri Kariya
(19BEC051)

Spokesperson
Manasi Yadav
(19BEC067)

Spokesperson
Akshat Baheti
(19BEC008)

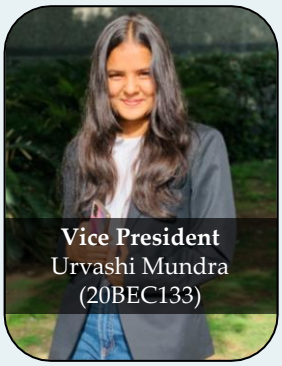
Editorial Head
Ishika Agarwal
(19BEC041)

Executive Head
Krishna Thakkar
(19BEC136)

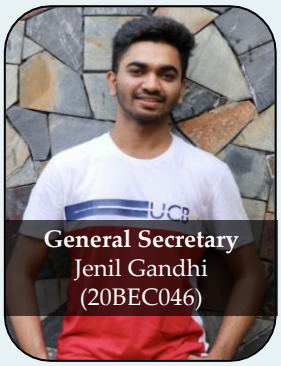
Executive Head
Rinkal Jain
(19BEC111)

Team ECO 2023

President
Dhyanik Pujara
(20BEC028)

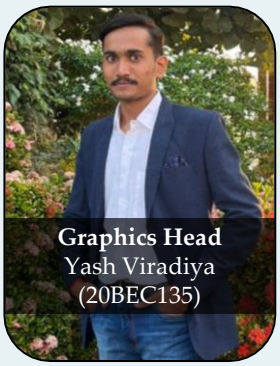


Vice President
Urvashi Mundra
(20BEC133)

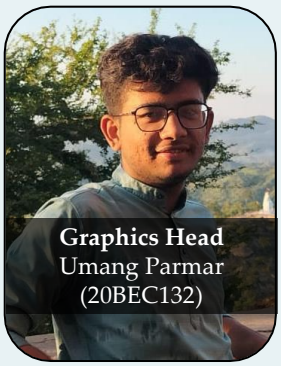


General Secretary
Jenil Gandhi
(20BEC046)

Treasurer
Dhyan Thakkar
(20BEC027)



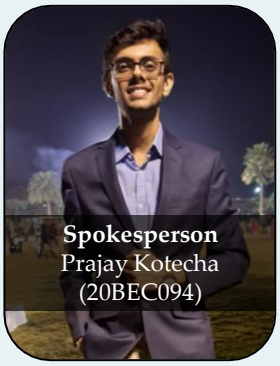
Graphics Head
Yash Viradiya
(20BEC135)



Graphics Head
Umang Parmar
(20BEC132)

Graphics Head
Harshesh Shah
(20BEC111)

Spokesperson
Sahaj Soni
(20BEC106)

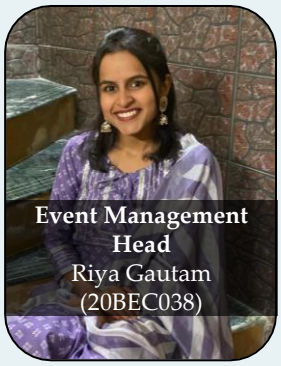


Spokesperson
Prajay Kotecha
(20BEC094)

Editorial Head
Mayur Das
(20BEC066)

Editorial Head
Chinmay Kansara
(19BEC019)

Event Management Head
Anshul Dani
(20BEC009)



Event Management Head
Riya Gautam
(20BEC038)

Creatives and Cultural Head
Vaishnavi Shah
(20BEC113)

Creatives and Cultural Head
Vrushti Modi
(20BEC136)

Team ECO 2023

Organizing Secretary
Brijesh Patel
(20BEC083)

Organizing Secretary
Parth Patel
(20BEC086)

Joint Secretary
Dhruv Prajapati
(20BEC093)

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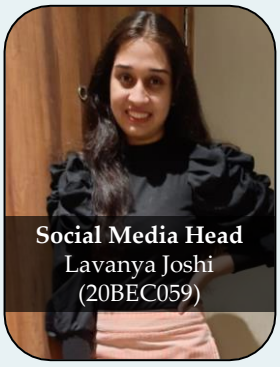
Riththika S.
(20BEC102)

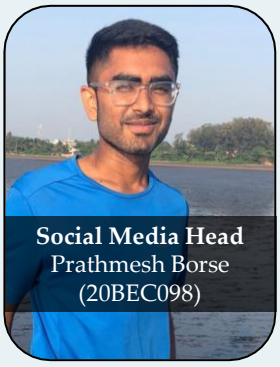
Technical Head
Hiten Galiya
(20BEC036)

Executive Head
Ayush Shah
(20BEC015)

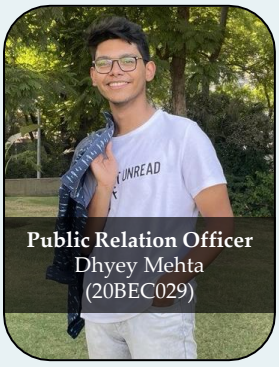
Executive Head
Suraj Modi
(20BEC124)



Social Media Head
Lavanya Joshi
(20BEC059)



Social Media Head
Prathmesh Borse
(20BEC098)



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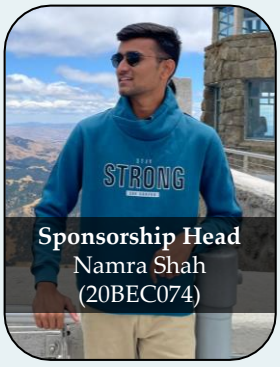
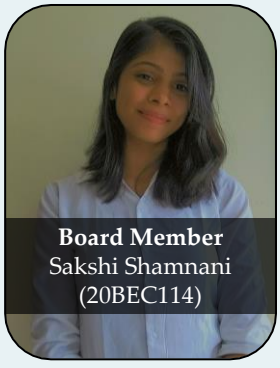
Dhyey Mehta
(20BEC029)

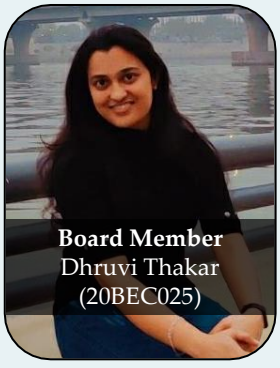
Public Relation Officer
Sanchit Sharma
(20BEC108)



Sponsorship Head
Namra Shah
(20BEC074)



Board Member
Sakshi Shamnani
(20BEC114)



Board Member
Dhruvi Thakar
(20BEC025)

Board Member
Darshi Khalasi
(20BEC056)

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