



FARADAY

The Department of Electronics Engineering Newsletter

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Second Conference on 'Recent Trends in Electronics Engineering'



The second conference on 'Recent Trends in Electronics Engineering', the annual conference of the Electronics Department, saw record participation for a second consecutive year. The conference was a one-day event, held on the 4th of December, 2017. The event was graced by Dr. Arbind Kumar, a senior scientist working with the Govt. of India, who praised the efforts of the college in encouraging students to carry out research at a young age.

FARADAY - A NEW BEGINNING

The Electronics Department is one of the oldest departments of VIT, and it gives me great pleasure to announce the passing of yet another extremely successful year for the Department. Our prime motivation this year has been the desire to innovate, and we have tried our best to ensure that this spirit is passed on to every student of the Department. We sought to achieve this by organising paper

Salient Features:

- Student publication count in reputed journals reached 43
- Two patents were filed during the conference
- Students were exposed to the specifics of paper publication like LaTeX, plagiarism check, and the standard layout

publishing conferences, offering honours courses to students, organising industry visits and guest lectures. Through this newsletter, we seek to acknowledge the dedication of all the students and faculty that made the year so successful. I thank the newsletter team for their efforts. Wish all of you the very best for the year ahead.

- Dr. Vijay Gaikwad
Head,
Department of Electronics Engineering

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'Faraday' is the first initiative of the departmental newsletter taken up at our institute. It is a great effort to spread awareness



and keep everyone updated about the ongoing departmental events. My best wishes to the team working on it.

- Prof. Dr. Rajesh Jalnekar
Director,
Vishwakarma Institute of Technology, Pune

Faculty Achievements

The following professors have been granted a PhD in the academic year, 2017-18:

1. Dr. Sangeeta Kurundkar
2. Dr. Abhay Chopde

Dr. Vijay Gaikwad received an award for the publication of an international book.

Dr. Sangeeta Kurundkar received an award for paper publication in an international journal.

Ongoing Projects at the Department

- o Lane Departure identification for advanced driver system (Prof. Dr. V. D. Gaikwad)
- o Improvement in Telemedicine through Compression and Variability Analysis of Physiological Parameters (Prof. Dr. A. B. Barbadekar & Prof. R. V. Tornekar)
- o Development of smart reading assistance system for visually impaired people (Prof. Dr. A. B. Barbadekar)
- o Advanced identification of micro-cracks / damage in solar cells (Prof. Dr. V. D. Gaikwad & Prof. Dr. A. M. Chopde)
- o Low cost high tech Educational Robot (Prof. M. M. Shidore)



MOUs signed

Memoranda of Understanding signed with the following organisations:

1. Castalia Research Lab
2. Maharashtra State Electricity Distribution Company Limited
3. Aeron Systems Pvt. Ltd.
4. ARM Embedded Technologies



KIST Internship Experience

Understanding the way things are, how things work and understanding about our feelings, attitude and behaviour is all part of research.

My Summer Internship was in Korea Institute of Science and Technology, Seoul, South Korea which was basically a research internship.

During my internship, the most prominent thing I learnt was developing temperament towards research. On the first day we visited different labs and learnt about various kinds of experiments which were being conducted in the field of semiconductors and its products. During my first meeting, we had a presentation conducted related to different research topics which my lab members were working on. The most fascinating topic for me was the way they were trying to replicate how a plant sees its surroundings. They actually built a crystal which would work like a leaf and captured images of letter 'A' in different lightning conditions.



My project was related to an experiment which was conducted on 50 people and their brain activities while doing different tasks. When a person is learning, involved in decision making and focused in some mental activity we release beta waves. In all we release 5 different kinds of waves, while involved in different mental activities and this is our brain-wave profile. The aim was to measure the amount of stress on our brain when we are sitting in front of a computer screen and what measures we can take to reduce the stress level.

Apart from learning and developing a habit of research towards everything, interacting with people and learning about their culture and society was an experience in itself. If you have curiosity to discover something new and explore science then doing research is definitely the way. Research in any field expands your knowledge and whenever you get an opportunity just grab it and start your journey.

- Saloni Burad
B. Tech, Electronics

Workshops conducted during the Academic Year

1. ISTE-STTP on Statistical Techniques for Data Analysis in Research (Prof. Vrinda Parkhi)
2. Project based Learning of Embedded System using ARM (Prof. Dr. A. B. Barbadekar & Prof. A. K. Talele)
3. STTP on Multimedia Signal Processing (Prof. Rupali Tornekar)
4. STTP on Signal Processing using MATLAB (Prof. Rupali Tornekar)
5. Industry Oriented Training Course in Computer Vision (Prof. Dr. V. D. Gaikwad & Prof. Milind Rane)



Summer Training

1. Machine Learning (Prof. Dr. Vijay Gaikwad)
2. Signal Processing using MATLAB (Prof. Rupali Tornekar)
3. Industrial Projects using Arduino (Prof. Dynaneshwar Kanade)
4. Robotics & Automation (Prof. Mrunal Shidore)
5. Automotive Electronics (Prof. Dr. Ashwini Barbadekar)
6. Computer Vision (Prof. Milind Rane)
7. Power Supply Design & Development (Prof. Dr. Shilpa Lambor)
8. IoT & Wireless Networks (Prof. Dr. Rambabu Vatti)
9. R Programming (Prof. Ajay Talele)
10. Basic Electronics & PCB Design (Prof. Dr. Sangeeta Kurundkar)
11. VLSI & Back End Design (Prof. Dr. Abhay Chopde)



Academic Toppers



Kapil Mulchandani
Dept. Topper

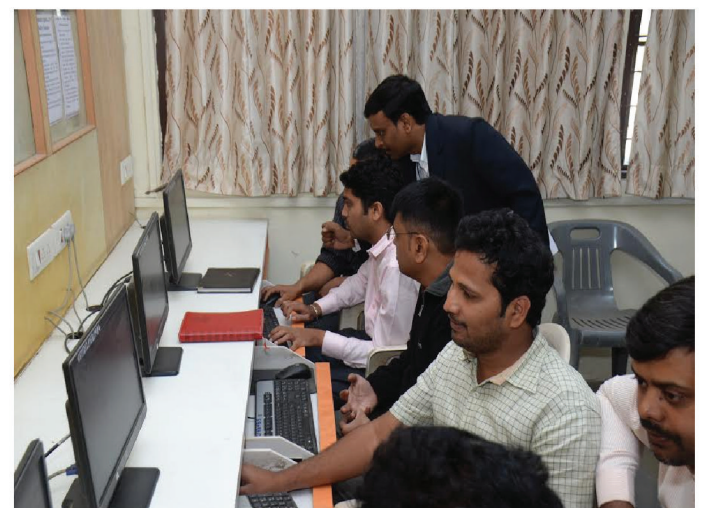
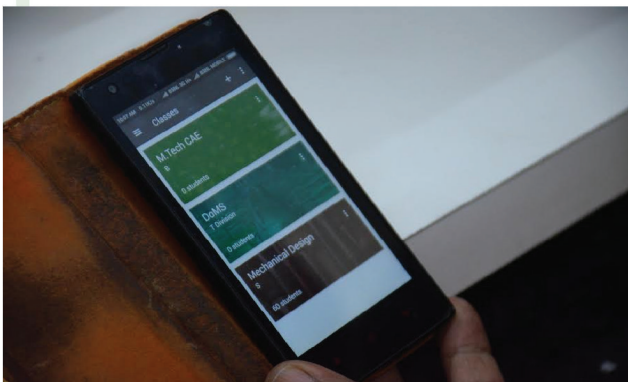


Sayali Divekar
Best Out-going Student
at Institute Level

MOOCs Development

Particular	Details
# MOOC Courses	12
# MOOC Videos	200+
# MOOC Duration	2000+ Mins (50+ Hrs)
# MOOC Average Duration per Video	5 – 15 Mins

How many times have you struggled to learn a concept in class, only to find a brilliant explanation of the same concept in a video available online?



MOOCs, or Massive Open Online Courses are free online courses offered by educational institutes. The Department of Electronics realizes that students can face difficulties in understanding tricky concepts during lectures. MOOCs are hence the solution. They offer a number of advantages – a student can pause-rewind-play, or slow down the playback of the video when he/she does not understand a particular concept. These features cannot be applied to the traditional classroom – professors need to complete courses in a given amount of time and one cannot expect them to repeat lectures until every student has understood every concept. More than thirteen professors from the Department of Electronics have created video content totaling to around 2500 minutes, and this content has been made available to students through the YouTube channel of the department (Link: https://www.youtube.com/channel/UCN2-bHI fK-K1v6W4RFB4htyg?view_as=subscriber).

Center of Excellence in Computer Vision



Industry Visit- Gudel India Pvt. Ltd.

21st November 2017 was one of those days when over 40 students got a chance to experience the industrial environment. Gudel India Pvt Ltd. - Exporter of industrial roots, worm gear, high performance servo worm gear, planetary gear, bevel gear, racks, gears, pinions, spur gears, etc. gave the students of VIT Pune a chance to visit their manufacturing plant to observe the various operations and control systems. The event began with the assembly of all the students and the teachers in-charge at 1 pm near the college gate. All the students were then briefed about the whole visit and the observations to be made. The 30 km journey from college to the manufacturing plant then took about one and a half hour. After reaching there, students were instructed about the precautions to be taken and then introduced to their factory tour guide. From there, the guide gave everyone a tour around the factory showing various parts of the factory and various machines. At first the students were shown the control panel of the factory and were told about the working of relays, fuses, variable frequency drive (VFD), transformers and power supply system as a part of study of the control panel.

Then everyone was lead towards Gantry Robot systems, where they were told about degrees of freedom in a robot. The gantry robot first shown has three degrees of freedom, i.e. along x, y and z axes, and can be used for fittings and tasks such as pick and place. Students were also explained about the working of solenoid valves and how they are used for pneumatic applications to control or regulate the pressure and passage of air. They were then explained about the controls of the Gantry robot along with a demonstration.



The students then got to observe Kuka - the robotic arm with 6 axes and 6 degrees of freedom. After this, they were lead towards another Gantry Robot. This robot can used to place a component with a particular orientation and at a particular place with accuracy, with the help of image processing and proximity sensors.

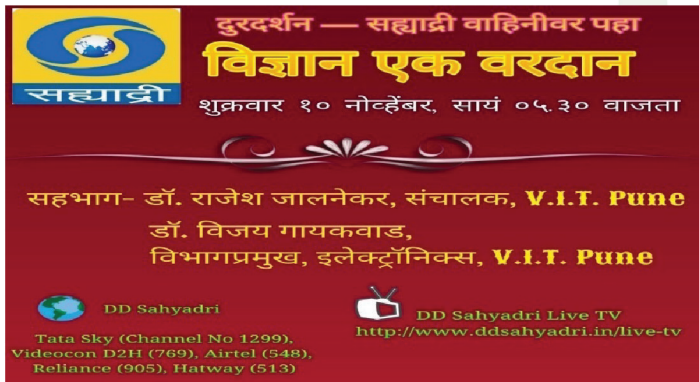


The factory tour ended with everyone assembling near the canteen and discussing about the career opportunities in various processes involved into the working and control of machines, considering the knowledge in electronics, mechanisms and pneumatics, programming and image processing. Mr. Sunil Inamdar, Systems Manager, Gudel India Pvt Ltd, Pune then talked to everyone about the internship opportunities provided by Gudel and agreed to counsel the students regarding their careers.

Overall, it was an enlightening experience for everyone since they realised that having at least some basic knowledge in all the fields is necessary when it comes to automation. Having learnt a lot of new things, everyone returned to the college with fresh memories of the factory visit.

-Richa Kulkarni,
T.Y. Electronics

Doordarshan DD Sahyadri Video Shooting of Electronics Department



Patent filed by Jairaj Jangle and his team



Award won by Jeevan Thakre at the IET Karmaveer Expo'18

The Start-up Blog

THE STYLE DIVA - While on a shopping spree, an idea struck Deboshree Roy's mind. The high prices and the low budgets are the biggest disappointments for any girl. This prompted her to start her own venture, "The Style Diva", an e-commerce website which primarily focuses on providing accessories at affordable prices. She communicates and negotiates with vendors to provide the best quality at the best price to all her customers. With a facebook fan-base nearing 30,000 followers, she plans to further expand her business into the fashion genre in general.



TOFFEE CHOCS – Nothing can be more alluring than a personalized homemade chocolate! That's how the startup "Toffee Chocs" began. Kapil Mulchandani was very fond of making chocolates. All his friends and family members were very fond of his chocolates. This gave him an idea to start his very own startup of selling homemade chocolates. The main aim of this startup is to add different flavors to every individuals life and thus comes their tagline, "Dainties that heal your mood!"

- Pasham Vyawahare,
B.Tech Electronics

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