ABES INSTITUTE OF TECHNOLOGY

(College Code-290)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

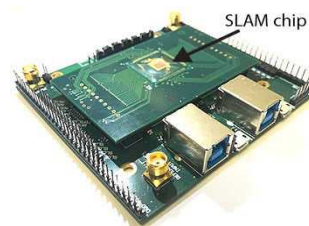January 2019—June 2019   Volume –3

SLAM-ming good hardware for Drone Navigation

Researchers at the University of Michigan have developed an ultra-energy-efficient processor to help autonomous micro aerial vehicles navigate their environment. They were able to take advantage of highly effective deep learning algorithms to realize visual simultaneous localization and mapping (SLAM) technology in a single chip measuring a little more than a centimeter.

The goal of SLAM is to provide a continual estimate of where a moving, autonomous device is located along its posture within its environment, both vertically and horizontally, while also constructing a 3D map as the robot navigates its environment. SLAM, which is also used extensively in augmented/virtual reality applications, can use a variety of sensing and location techniques such as LIDAR, GPS, and cameras.

Visual SLAM relies solely on cameras, and is the preferred method for autonomous aerial vehicles. However, cameras require extensive processing, which increases the amount of power needed and the overall weight for the battery. That added weight is incompatible with micro aerial vehicles – some of which can be mere centimeters.

A team of faculty and students, led by Professors Hun-Seok Kim, David Blaauw, and Dennis Sylvester, have created the first visual SLAM processor on a single chip that provides highly accurate, low-power, and real-time results.

Dr. Sapna Katiyar

Professor, ECE

Vision

To impart in depth knowledge to the students of Electronics & Communication Engineering for achieving academic excellence, professional attitude and ethical values, inculcating research culture to meet the challenges of global industrial demands.

Mission

- Impart quality and value based education, with practical orientation to transform students into the skilled, trained and competent individuals.

- Infusing research culture among students and faculty so that the Department be recognized as Center of Excellence in various domains.

- Inculcating team work, leadership qualities, professional ethics and social responsibilities.

- Prepare graduates for working in multicultural and multidisciplinary environment.

Program Educational Objectives

- Graduates of the program will be able to identify and apply domain specific knowledge to have a successful career in real world applications by keeping abreast of the technological changes.

- Graduates of the program will continue to learn and adapt in a world of constantly evolving technology through advanced degrees, professional courses and/or research.

- Graduates of the program will be committed to acquire professional ethics, moral values and devotion to duty so that they prove to be worthy citizen of India with International outlook.

Events Corner

Technical Club Activities under the banner of ISTE

- A series of events with the name **"QUIZZOMANIA"** were organized by on **8th Feb, 2019** for the students of 3rd Year. The motive of these events was to develop teamwork and individual leadership among students.

- **BRAIN-"Baking or Breaking" event was organized** on **2nd March 2019 (Saturday)** in which 184 students of ECE participated. Top Five teams was awarded by cash prizes, certificates and gift hampers.

- Workshop on **"Microsoft Office"** was organized **by on 29thMarch 2019**, in which 21 students of the Department participated and were trained by Prof. Vipin Sharma, Assistant Professor, ECE Department**.** The aim of the workshop was to enhance the skills of students and make them aware with various tools/options available with the software.

- Workshop on **"PLC & SCADA"** on **10th April 2019**, in which 62 students of the Department participated. The industrial expert of this training was Mr. Joel Giftson from CETPA InfoTech Pvt. Ltd.. The students saw a live demonstration of Programmable Logic Control (PLC) with its hardware setup with a brief introduction of SCADA , its features and the live examples of its use in industries.

Workshops/Expert Talks

- 2-Days Workshop on **"Data Structures"** was organized for the Students of 2nd and 3rd year students of ECE, on **3rd and 4th April, 2019**.
  Ms. Gunjan ,technical expert from "Cetpa Infotech Private Limited" explained the various key points of Data Structure and it's applications through a hands on session for the students so that they could experience how to code and program for real life applications. The session was attended by about 60 students.

- Expert talk on **"Primary & Secondary Radars and their Applications in Air Defense"** was organized for the Students on **18th April 2019**.
  Prof. S.B. Bajpayee, Professor in ECE department, and retired Air Vice Marshall, Indian Air Force explained the various key points of Radar technology and its applications. The session was attended by 37 students.

Industrial Visits

- An Industrial Visit to **Central Power Research Institute (CPRI), NOIDA** was organized for the students of 3rd Year on **16th April, 2019**. The students witnessed various sections of CPRI Noida, where they understood the process of Transformer Oil Testing, Power Transformer testing, Control Panel Testing and Energy Meter Testing during the visit.

- An Industrial visit at **Zee Media Corporation Ltd, Noida** was organized for the students of 3rd Year **on 20th April, 2019.** During this visit, students came to know about the various processes involved in broadcasting of channels. The officials from Zee Media have demonstrated all the equipments involved, from selecting a content from physical space to airing it on a channel in India as well other countries. The students have also got a chance to be a part of a live recording for the show "The Great Debate Show- KYA KEHTA HAI INDIA", which is aired on Zee News Channel.

Trainings..

5-Days Winter training Program was conducted in **CoE for IoT on "Basics of IoT and its Applications" from 14th Jan, 2019 to 18th Jan, 2019.** The training program was attended by 30 Students from various colleges of NCR and outside. The students were given hands-on training on various kits like Wi-Fi Mote, BLE Mote by in-house experts, Ms. Sugandh Gupta (ECE).

Mr. Dhananjay Joshi, the IoT expert from Telesys Software also delivered a session and discussed various applications and security aspects in the field of IoT.

5-Days Winter training Program was conducted in **COE Analog & Embedded Systems on "Basics of Analog & Embedded Systems" from 14th to 18th January, 2019.** The program was attended by 18 students of ECE. The students were given hands-on training on various tools and platforms like ASLK Pro, MSP430 by in-house experts ,Mr. Aviral Malay and Mr. Rachit Patel.

Mr. Praveen Kumar Prajapati, the Embedded Systems expert from FICE Education delivered a session on the final day of the program and gave a lot of practical exposure to the students and discussed with them about the ongoing technologies and trends.

Trainings..

- Interactive session on **"IoT Security"** by **Ms. Shiwani Aggarwal, a Principal Design Engineer from Hughes Systique, Gurugram** was organized for 4th year students of ECE on **12th April 2019**. The session was attended by about 50 students. Practical applications, scope of Embedded Systems & IoT in the modern era were discussed. The speaker also focused on the importance of security and protection in this field, especially in IoT. Several hacks and use cases related to the security aspects of IoT were also discussed.

- Internship program for **B.Tech 1st year ECE students** was conducted in the **Centers of Excellence of ECE** from **20th May, 2019 to 30th May, 2019**. The objective of this internship program was to empower the students to learn beyond curriculum so that they can become industry-ready and job-fit.

- 8 weeks Summer training program on **"Embedded Systems & IoT using Microcontrollers & Raspberry Pi"** was conducted from **10th June 2019 to 5th July, 2019 in COE Analog & Embedded Systems** which is being attended by students from various colleges of NCR. The students are learning to program MSP430 microcontrollers and developing hardware and software based applications. Additionally, students are also learning to add wireless capability to their projects using the concept of "IoT" and creating apps for interaction with hardware thereby learning to develop smart and innovative solutions and prototypes.

Student's Achievements

Technovation Hackathon organized by Greater Noida Industrial Development Authority (GNIDA) , on 26-27 January 2019, at Sharda University , Greater Noida

- **Ashish Bhatnagar, Dewesh Kumar Mahur and Pragati Tiwari,** Students of 3rd Year and 2nd Year respectively were shortlisted with their project on **"IoT based Portable Air Quality Monitoring Device".**

Congratulations…...

Following Teams of Students of ECE have been shortlisted at the national level for **Grand Finale of Smart India Hackathon 2019,** Hardware Edition, **organized by AICTE, Govt. of India** which is to be held from **5th July, 2019 to 12th July, 2019 at NIT, Trichy:**

- **Ashish Bhatnagar** of 3rd Year, **Veral Agrawal** and **Kajal Verma** of 2nd Year ECE and their team under the name **"TechWizards"** was shortlisted under the problem statement "Customizable Sorting and Packaging System" which is given by MSME Di Guwahati.

- **Ravaishmi Gupta**, 2nd Year ECE and her team under the name **"Technocrates"** was shortlisted under the problem statement "Truck Weighing Suspension System" which is given by Himalayan Chamber of Commerce (Smart Vehicles).

Jyoti Chaudhary of 2nd Year ECE Secured third position in 4x400m race in Dr. Abdul Kalam Sports Fest 2018-19 (Zonal Level) held at RKGIT, Ghaziabad.

Student's Achievements

Congratulations!
Mayank for Qualifying
GATE, 2019

Placements

Students of Electronics and Communication Engineering secured a good number of placements. Prominent recruiters for the students of Electronics and Communication Engineering are:

TCS

HCL

Wipro

Amazon

NIIT Ltd.

Genpact

Dynotech

Cognizant

Capgemini

Mobiloitte

Vivo Mobiles

Torrent Group

Nagarro Software

Successive Software

Newage Instruments

Stemrobo Technologies

Faculty's Corner

Faculty Development Programs

- 3-Days Faculty Training Program on **ANSYS HFSS Software** was organized from **15th May, 2019 to 17th May, 2019**. Mr. Karthikeyan K, Application Engineer, Entuple Technologies Pvt. Ltd., Banglore , focused on design and simulation of Antenna, developing prototypes and projects using analog components and circuits.

- 5-Days Faculty Development Program on **"Remote Sensing and Image Processing Applications in Rural/Urban Development/Planning" under TEQIP III sponsored by AKTU, Lucknow** was organized by the department from **24th June, 2019 to 28th June, 2019**. The FDP was attended by 42 faculties from various colleges of NCR. The main speakers of the program were:

Dr. Praveen Kumar Rai from the School of Geo-informatics & Remote Sensing, Amity University, delivered a session on remote sensing in rural development.

Ms. Avneet Kaur , MATLAB and PLC Expert/ Developer, CETPA Info Tech Pvt. Ltd Noida focused on development of Artificial Neural Network algorithms using MATLAB .

Mr. Amit Bansal, Founder AB GIS Tech focused on QGIS tools and applications.

Dr. Tapan Jain from IIIT Nagpur focused on giving hands-on knowledge and programming for Image Processing using MATLAB.

Dr. M. A. Ansari from Gautam Buddha University focused on Transformed Based Image/Signal Processing.

- 9 Research papers are published in various conferences and Journals by the faculties and students of the Department.

Faculty's Corner

Congratulations…..

Mr. Vipin Sharma

Mr. Rachit Patel

- **Mr. Vipin Sharma** (Assistant Professor, ECE) got enrolled in **Ph.D** in the field of **Antenna Design from Jaypee Institute of Information Technology, Noida.**

- **Mr. Rachit Patel** (Assistant Professor, ECE) got enrolled in **Ph.D** in the field of **Analog VLSI from Jaypee Institute of Information Technology, Noida.**

- **Mr. Vipin Sharma** (Assistant Professor, ECE) qualified 4 credit course of Intellectual Property under **"SWAYAM ONLINE COURSE CERTIFICATION"**.

Dr. Hari Mohan Gaur

Department

Welcomes

Dr. Hari Mohan Gaur, Associate Professor

(Ph.D in nano-technologies, NIT Kurukshetra)

Reminiscence-2019

The Department of Electronics & Communication Engineering of ABESIT Ghaziabad organised **Alumni Meet (Reminiscence-2019) on 19th January, 2019.** The alumni of all the batches from 2011 to 2018 pass outs graced the occasion with their presence and shared their memories in the college with their faculty and juniors over high tea. They also shared their experiences in their respective job profiles and guided their juniors about the latest developments taking place in the different industries.

Alumni Corner

I,**Sakshi Chhabra** is a ABESIT Alumni of **batch 2007-2011**. I am currently pursuing my Doctarate (full time) at BITS Pilani, Pilani Campus at School of Management Studies. I am full time research scholar at BITS. The Department has a highly competent and devoted faculty with vast teaching and industrial experience, qualified from highly reputed institutions. An excellent academic environment is available for creative and productive work both for faculty as well as students.

Congratulations !

Prachi Bharadwaj for being Miss ALOHA 2019.

ABESIT organised a wonderful **Farewell Party (ALOHA-2019)** for the students of B.Tech. Final Year on **3rd June, 2019**. The highlight of the show was the Ramp Walk where students walked on the ramp. The evening saw the crowning of Prachi Bhardwaj of ECE as Ms. ALOHA-2019 and Gaurav Chaudhary was ad-judged Mr. ALOHA-2019.

Upcoming Events

Come and Join us!

In

Artocraft (Art Club)

Technovision (Technical Club)

Codex (Coding Club)

Eco Club (Disha)

where various activities to enhance the skills of the Students in various fields will be conducted

&

Smart India Hackathon, 2019