ASIET CHAPTER

Adi Shankara
INSTITUTE OF ENGINEERING AND TECHNOLOGY

International Society of Automation
Adi Shankara Institute of Engineering and Technology Student Section

## Department of Robotics and Automation

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IEEE Robotics & Automation Society

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# ROBOTECH

## Monthly Newsletter

OCT 2023

# Content



## Vision

Progress through quality education and evolve into a center of academic excellence in the field of Robotics and Automation

## Mission

To provide a supportive academic environment for value-added education and continuous improvement. To develop society responsible engineers with technical competence and leadership skills

# Industrial Visit and Interaction at ASIMOV Robotics, Kerala Startup Mission, Kalamassery

The Robotics and Automation department of ASIET conducted an industrial interaction at ASIMOV Robotics at Kerala Start-up Mission, Kochi. The illuminating interactive session was organized for semester seven students of the RA Dept. ASIET. The organization ASIMOV is a privately held research service institution founded in 2012. The establishment brings forth highly customizable nouvelle robotics platforms and solutions to industries and real-life issues while working with hazardous, unsafe, inefficient, repetitive scenarios. The talk session comprised of introduction to industrial robotics, characteristics essential for a robotics engineer, and much more. The pupils were introduced to the establishment's primal interest- humanoids. The students were also exposed to robots which were applied in extensive fields like Medicine, defense, space, health care, retail, etc. The Robotics and Automation faculty, the session enlightened students to gain a latter-day perspective on industries and futuristic technologies.


# Enlightening Exhibition at Christava Mahilalayam Public School

The Robotics and Automation department of ASIET got involved in an exhibition conducted at ChristavaMahilalayam Public School to ignite inventive and prolific interests in young minds. The exhibition was held from 03-10-2023 to 05-10-2023. The students put forth their various projects consisted of Cobots, FPV Drones, Robotic Vacuum cleaner incorporating slam technology, Obstacle Avoidance Machine and much more.

# FUSION 360 Workshop by Hack Club

Athulkrishna NS from S5 Robotics conducted a Fusion 360 session organized by Hack Club ASIET. Students from various departments attended the workshop, making it a fun and interactive experience where they learned the software's fundamentals. The session covered the basics, including 2D sketching, 3D drawing, and assembly. Additionally, students had the opportunity to create 3D sketches of objects like paper pins and toy blocks. This event sparked enthusiasm among the students.

# Talk Session on INDUSTRIAL IOT

The department hosted a 2-hour talk session on Industrial IoT on October 11th. Industrial IoT is a rapidly evolving field with the potential to revolutionize industries and drive significant advancements in automation. Mr. Sasikumar R from Janatics India Pvt Ltd was invited to conduct the talk session for both S5 and S7 students. This event generated a lot of enthusiasm among the students, as they were eager to explore the world of Industry 4.0.

During the session, Mr. Sasikumar shared his industrial experience of over 8 years and imparted his knowledge on the topic. Furthermore, he provided the students with insights into the future of this field and the career opportunities it offers. The interactive session concluded with a Q&A session, allowing students to engage and inquire further.

## College UNION Election ‘23

On October 18th, ASIET conducted its union election for the year 2023-24, and the results were announced on the same day. Students from S5 and S7 of the department were elected to various positions on the union committee:

Vysakh MP – Magazine Editor

Shahin OS – University Union Council

Arjun M – Department Representative

# ISA Executive Committee 23-24

The new Executive Committee of the International Society of Automation has been formed through fair elections held on September 27th. Students from S3 and S5 have assumed various positions on the committee:

Adarsh Jomon – President

Kavya Venu – Secretary

Adithya B – President-Elect

BrahmaduttanNamboodiripad – Program Chair

Jishnu Sasikumar – Treasurer

# IEEE Robotics And Automation

## SBC ASIET Orientation Meeting

On October 12th, 2023, a group of members from the IEEE RAS SBC, under the IEEE Student Branch ASIET, warmly greeted the first-year students of the Robotics and Automation department. They conducted a one-hour orientation session to create a fundamental understanding of the RAS society among the students.

The session was led by Athulkrishna NS from S5, Robotics and Automation. He spoke about the inception of the RAS on our campus and the incredible journey undertaken by the RAS society. Athulkrishna gave a concise overview of RAS's functioning, the advantages of joining, and what students can expect when they become part of IEEE RAS. He highlighted RAS's primary objectives, which revolve around providing scientific and technological knowledge to its members. Athulkrishna encouraged the students to become part of the RAS community.

## IEDC ORIENTATION FOR FIRST YEARS AND ABOUT INNOVATION CHALLENGE 1.0 EVENT

A team from the IEDC visited to address the first-year students of Robotics and Automation on October 27th, 2023. They provided the students with a brief overview of the functioning of IEDC and the benefits of joining this professional society. They explained the operations of the IEDC incubator on our campus and shared information about the various startups working under it. The IEDC members extended a warm welcome to the students, encouraging them to join their community and explore a whole new world of innovation and technologies.

They also announced the "Innovation Challenge" event conducted by the IEDC, which serves as a platform for students to showcase their innovative ideas. Selected students will have the opportunity to be mentored by professionals and receive funding for their projects. The students were encouraged to participate in this event, and the IEDC team wished them all the best for their endeavors.

# PRAYAAG 3.O – Learn, Network and Explore

The Robotics and Automation department is proud to share that eight of our students from S1 enthusiastically participated in the esteemed tech event hosted by VISTARA'23 in association with Prayaag 3.0 on October 1st. The event took place at LBS College for Women, Poojapura, Trivandrum.

The event offered a diverse array of activities, including captivating workshops on Line Follower Robots, Robo Soccer, Robo War, Robo Maze, and Robo Racing. Additionally, it provided thrilling mountaineering and adventure experiences such as rope climbing, zip lining, rope bridge challenges, and more.

Our students formed two teams, each consisting of four talented participants, and they were excited to share their remarkable experiences and accomplishments, particularly from their participation in the line follower event. It's worth noting that all eight of them, namely Ashwin P Shine, Jesnamol Varghese, Deepak MR, Akhil Babu, Adwaith Krishna PS, Aryan Soji, Akshitha Francis, and Chandra Rajesh, were honored with certificates of participation.

The event was impeccably organized by the Robotics Club at LBS College, and their dedicated coordinators ensured the successful completion of all events. Our students' achievements shine as a testament to their dedication and the excellence of the event itself.


## Showcasing Doctoral Degree of Dr.Athira M

Ms. Athira M of the Department of Robotics and Automation successfully defended her thesis, which was concerning the topic "Virtual Synchronous Machine control for Frequency and voltage regulation in a parallel inverter low voltage AC Microgrid" from the School of Engineering, Cochin University of Science and Technology. The concept of VSM-based control is applicable for energy storage as well as for generation systems and loads with power electronic interfaces and a given degree of local energy buffer. This groundbreaking research will serve great utility for upcoming endeavors.

## LED WORKSHOP – The way to the Glaze

On October 12th, the IEEE Power and Energy Society hosted a captivating LED workshop that illuminated the fundamentals of LED production. The event was organized by PES SBC ASIET and expertly coordinated by Muhammed Fahad P S and many other brilliant coordinators to provide assistance. The event's speaker, Mr. Venugopal R from the EEE department, added a wealth of knowledge to the workshop.

Nine eager participants from our department, Robotics and Automation, attended the workshop held from 1 p.m. to 3 p.m. at the Digital Electronics & Circuits Lab in the EEE Department.

To foster inclusivity and encourage interaction, the workshop divided participants into different teams. Throughout the session, attendees enjoyed hands-on experiences in crafting functional LEDs from individual components. They also gained valuable insights into gate essentials, an introduction to breadboard usage, and connections.

The workshop received significant support and guidance from esteemed faculty members, making it an enriching experience for all participants. It proved to be an invaluable and informative opportunity for every enthusiastic individual looking to explore the world of LEDs and beyond.

# ADVANCED DEVELOPMENTS IN CURRENT ROBOTIC SCENARIO

Robots are evolving rapidly and expanding their presence beyond controlled environments into homes, hospitals, and other public spaces. Researchers are pioneering advanced artificial intelligence systems that empower robots to make independent decisions. These developments herald a transformation in industrial operations, with advanced robots boasting superior perception, integrability, adaptability, and mobility compared to conventional counterparts. This advancement leads to quicker setup, commissioning, and reconfiguration, enhancing operational efficiency and stability. As the cost of sophisticated equipment decreases alongside declining sensor and computing power prices, with software taking precedence over hardware for functionality, advanced robots are poised to perform many tasks more economically than previous automated systems. Key advancements in the current robotic landscape include enhanced artificial intelligence, autonomous navigation, improved human-robot interaction, soft robotics, swarming robots, robotic exoskeletons, miniaturization for medical purposes, improved robotic vision, collaborative robots, and AI-driven industrial automation.

These advancements are reshaping the future of robotics, integrating them more deeply into our daily lives and industries. According to a McKinsey report, automation and machines are poised to reshape the way we work, particularly in Europe, where workers may need to acquire different skills to secure employment. The report predicts an 18% decline in activities relying on physical and manual skills and a 28% decrease in those necessitating basic cognitive skills by 2030. Traditionally, robotics has focused on automating simple or repetitive tasks at scale or handling hazardous conditions where human involvement is limited. However, the integration of machine learning and artificial intelligence is likely to drive an increase in human-to-robot interactions in the future. The robotics industry is expected to experience significant growth in the years ahead, with estimates projecting its value to reach up to $260 billion by 2030. This growth is anticipated to come predominantly from professional service robots that perform a variety of tasks for humans, including cleaning, delivering, and transportation.

## Staff Editors

Prof. Dr Vinila M L (HOD)
Prof. Dr Julia T J

## Student Editors

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|---|---|
| Ashvin Manoj | S7 RB |
| Romal Abhay | S7 RB |
| Sam K Saju | S7 RB |
| Brahmaduttan Namboodiripad | S5 RB |
| Sneha Alphonso Francis | S3 RB |
| Nandana Sunil | S3 RB |
| Deepak M R | S1 RB |
| Chandra Rajesh | S1 RB |
| Akshitha Francis | S1 RB |
| Rida Alhaan J S | S1 RB |