Name of the Society:

IEEE Robotics and Automation Society (RAS) BMSIT&M Student Branch

Date of Formation: 1st January 2024

Coordinator:

Dr. Thyagaraj T, Dept. of ECE

Objective:

To foster advancement in robotics and automation by providing a platform for students to gain technical skills, engage in research, and connect with industry experts. They aim to bridge the gap between academic knowledge and practical application through workshops, projects, and seminar

Frequency of Meetings:

Two team meetings per month, and an Annual General Meeting with all RAS members.

Social media link:

Website : https://ras-bmsit.github.io

LinkedIn: https://www.linkedin.com/company/rasbmsit/

Instagram: https://www.instagram.com/ras_bmsit/

Roles and Responsibilities:

An IEEE Robotics and Automation Society (RAS) Student Branch chapter promotes robotics education through hands-on workshops (e.g., LFR, PID control), technical seminars, and industry field trips. Key responsibilities include organizing technical events, managing member recruitment, facilitating networking with industry professionals, maintaining active reporting, and fostering community engagement in automation technologies.

Activities conducted:

EUREKA
Date: Jan 2025
Location: BMSIT&M

About the Event:

EUREKA marked the official inauguration of the IEEE Robotics & Automation Society (RAS) Chapter at BMS Institute of Technology & Management for the year 2025. Held on 25th January 2025, the event symbolized the beginning of a new chapter focused on innovation, collaboration, and hands-on learning in the domains of robotics and automation. The inauguration brought together students, faculty, and IEEE members to celebrate the formation of a renewed leadership team and to set the vision for the year ahead. The event emphasized the role of student chapters in nurturing technical talent, encouraging interdisciplinary learning, and preparing young engineers to contribute meaningfully to emerging technologies.

Timeline:

- Inaugural Ceremony:
- The event commenced with the formal inauguration of the IEEE RAS BMSIT Chapter for the year 2025, marking the official start of the chapter's activities.
- Chief Guest Address:
- Dr. Mangala Gowri S. G., Secretary of the IEEE RAS Bangalore Chapter, conducted the inauguration and delivered an insightful address on the growing significance of robotics and automation, highlighting the importance of student-led initiatives and hands-on learning.
- EXECOM Installation:
- The newly appointed 22-member EXECOM team for 2025 was formally installed. The leadership team comprised students from diverse engineering disciplines, each bringing unique technical expertise and organizational skills.
- Vision & Roadmap Sharing:
- The session concluded with a forward-looking discussion outlining the chapter's plans for technical workshops, project-based learning, competitions, industry exposure, and participation in IEEE activities throughout the year.

Key Takeaways

- Successful inauguration of the IEEE RAS BMSIT Chapter for the year 2025
- Formation and installation of a strong, diverse 22-member EXECOM team
- Inspiration and guidance from IEEE RAS Bangalore Chapter leadership
- Clear vision set for technical growth, innovation, and collaborative learning
- Renewed enthusiasm among members to engage in robotics, automation, and IEEE initiatives

About the Event:

IEEE Open Day 2025, held on 21st March 2025, was a vibrant exhibition-style event that provided students with a comprehensive overview of the opportunities, projects, and technical initiatives within the IEEE community at BMSIT&M. The event served as a platform for knowledge sharing, interaction, and outreach, allowing students to engage directly with active IEEE societies. The IEEE Robotics & Automation Society (RAS) stall emerged as one of the major attractions, featuring live demonstrations and detailed explanations of ongoing robotics projects, thereby highlighting the society's commitment to hands-on learning and practical engineering.

Timeline:

- Event Inauguration & Opening:
- IEEE Open Day 2025 commenced with students exploring various IEEE society stalls, fostering interaction and awareness about technical activities and memberships.
- RAS Project Showcases:
- The IEEE RAS stall showcased three major ongoing projects:
- Mars Rover Project: Demonstration of autonomous navigation, terrain adaptation, and sensor-based decision-making.
- Robotic Arm Project: Live demonstrations focused on precision motion control, object manipulation, and industrial automation concepts.
- Underwater Robotics Project: Presentation of submersible prototypes addressing challenges such as buoyancy control, waterproofing, and underwater communication.
- Member Interaction & Outreach:
- RAS members actively interacted with visitors, explaining project objectives, technical challenges, and opportunities for student involvement.
- Membership Promotion:
- Attendees were encouraged to join IEEE RAS and participate in ongoing and upcoming technical initiatives.

Key Takeaways

- Effective platform to showcase ongoing RAS technical projects
- Increased student engagement and awareness of robotics and automation
- Strong interest generated in hands-on, project-based learning
- Successful outreach and recruitment of prospective IEEE RAS members
- Strengthened collaboration and community interaction within IEEE

IEEE Summer of Projects 2025
Date: May/june 2025
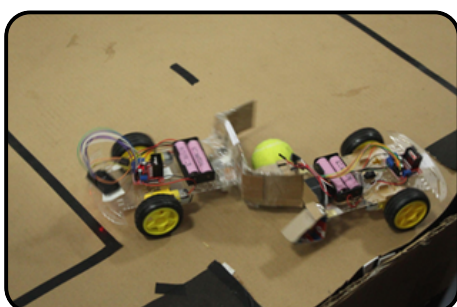## Location: BMSIT&M

About the Event:

IEEE Summer of Projects '25 (SOP'25) was a four-week, hands-on robotics and IoT workshop organized by the IEEE Robotics & Automation Society (RAS), BMSIT&M. Conducted across four consecutive Saturdays, the event was designed to provide participants with real-world exposure to embedded systems, robotics, automation, and sensor-driven applications. The workshop followed a progressive, activity-based learning approach where students worked in teams to design, build, program, and test robotic systems. With a blend of expert talks, guided project sessions, and competitive challenges, SOP'25 emerged as a highly engaging platform that fostered innovation, collaboration, and practical engineering skills among participants from across Bangalore.

Timeline:

- 31st May 2025 – Day 1:
- Introduction to embedded systems and robotics through the design and construction of line-following robots. Participants learned microcontroller programming, sensor integration, and real-time decision-making, concluding with a line-following robot competition.
- 7th June 2025 – Day 2:
- Focus on software–hardware integration using mobile-controlled robots. Participants developed custom control applications using MIT App Inventor, established wireless communication, and tested their systems through a Robo Soccer competition.
- 14th June 2025 – Day 3:
- Introduction to advanced sensing technologies, including IMU and ultrasonic sensors. Teams built gesture-controlled robots using ESP-NOW communication, gaining hands-on experience in sensor data processing and low-latency wireless control.
- 21st June 2025 – Day 4:
- System integration challenge where participants combined IR sensors, control logic, and mobile applications to build a fully functional line-following robot with real-time directional feedback, culminating in final demonstrations.

Key Takeaways

- Strong understanding of embedded systems, sensors, and robotic control mechanisms
- Practical experience in wireless communication, mobile app development, and system integration
- Enhanced problem-solving skills through debugging, testing, and iterative improvement
- Improved teamwork, collaboration, and technical communication among participants
- Exposure to real-world robotics applications, preparing students for advanced projects and competitions

IEEE Winter pf Projects 2025
Date: December 2025
Location: BMSIT&M

About the Event:

Winter of Projects (WoP) is an annual multi-society prototyping initiative that encourages interdisciplinary collaboration among students. In 2025, WoP scaled up to 36 teams (from 22 teams in 2024), underlining rapid growth and enthusiastic participation. Each IEEE society releases a set of domain-specific problem statements (PS), from which teams choose — via an auction-style selection — the problem they wish to solve. Over a month, juniors work under the mentorship of seniors, alumni, and ExeCom members to design, build, test and refine functional prototypes. The event includes structured review rounds and mini-workshops to support participants.

Timeline:

- 9/10/25: Problem Statement (PS) release by IEEE societies
- 09/11/25: PS selection by teams & presentation submissions
- 10/11/25 – 04/12/25: Mentorship and guided prototyping phase
- 29/11/25: Mid-term review and feedback rounds
- 05/12/25: Stark Expo — campus-wide public prototype exhibition & evaluation

Stark Expo — Culmination Event

- WoP concluded with Stark Expo, a public exhibition where all 36 teams showcased their working prototypes.
- Prototypes were evaluated and viewed by faculty members, students, industry guests, and IEEE representatives.
- The expo served as a platform to highlight innovation, technical depth, and real-world applicability of student projects.

Key Takeaways

- Extensive hands-on experience with:
  - Sensors and embedded systems
  - IoT and communication protocols
  - Robotics and automation
  - Web and database integration
- Strengthened mentorship culture, with seniors actively guiding juniors through real engineering challenges.
- Promoted interdisciplinary collaboration and peer learning across departments.
- Enabled teams to develop portfolio-ready functional prototypes, beneficial for:
  - Hackathons and competitions
  - Internships and placements
  - Research and advanced projects
- Enhanced visibility of student innovation to faculty and industry stakeholders.