SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE
(AN AUTONOMOUS INSTITUTION)

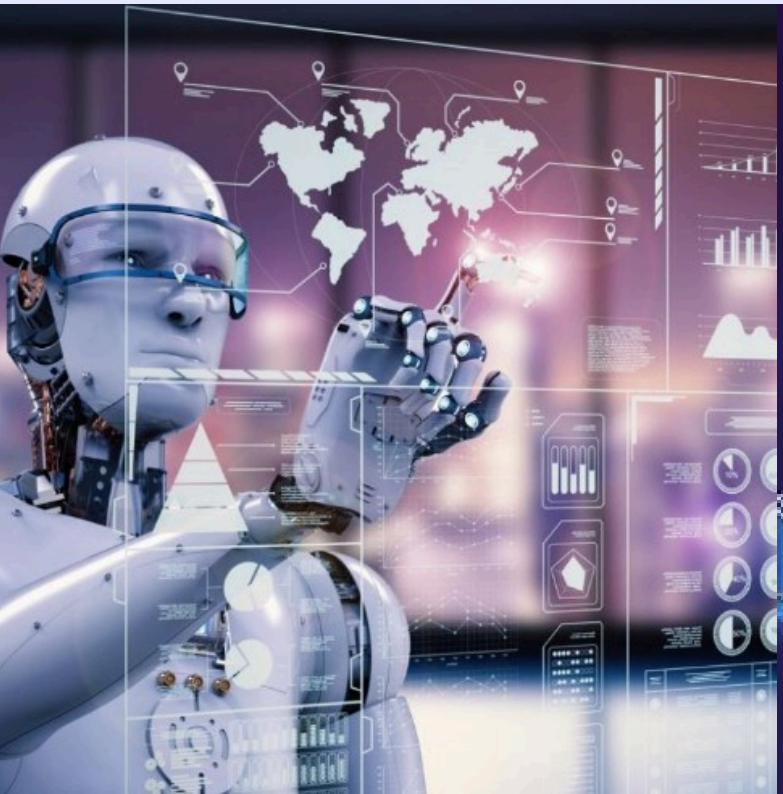
25 YEARS

DEPARTMENT OF
ELECTRONICS AND COMMUNICATION ENGINEERING

ROBOTICS AND AUTOMATION CLUB ANNUAL REPORT

(Academic Year: 2024 to 2025)

Submitted by
Dr. T. Deepa
Assistant Professor
Faculty Coordinator



Preface

The Robotics and Automation Club of the Department of Electronics and Communication Engineering, Sri Manakula Vinayagar Engineering College, serves as a dynamic platform to nurture innovation, technical competence, and collaborative learning among students. The club is established with the objective of bridging the gap between theoretical knowledge and practical implementation in the domains of robotics, automation, embedded systems, and intelligent technologies. The club actively encourages students to explore emerging trends in robotics and automation through hands-on workshops, technical training programs, expert lectures, project development, competitions, and interdisciplinary activities. By fostering creativity, problem-solving skills, and teamwork, the club aims to prepare students to meet the challenges of modern engineering and industrial automation. The effective functioning of the club is supported by a dedicated team of office bearers, including the President, Vice President, Treasurer, and Technical Head, who work collectively with enthusiastic club members to plan, organize, and execute various technical and co-curricular activities. Their leadership and commitment play a crucial role in ensuring the successful achievement of the club's objectives. Through continuous learning, innovation, and industry-oriented initiatives, the Robotics and Automation Club strives to develop technically sound, socially responsible, and professionally competent engineers. The club remains committed to contributing to the overall academic excellence and technological advancement of the institution.

Faculty Coordinator
Dr. T. Deepa

HoD/ECE
Dr. P. Raja

IQAC Coordinator
Dr. Arivalagar A A

Director Cum Principal
Dr. V.S.K. Venkatachalapathy

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ABOUT THE INSTITUTE

Sri Manakula Vinayaga Educational Trust was founded to provide quality and affordable education to the weaker sections of society. The trust established Sri Manakula Vinayagar Engineering College (SMVEC) in 1999. SMVEC is an autonomous institution affiliated to Pondicherry University. It offers 13 undergraduate, 8 postgraduate and 11 Research programs in engineering. SMVEC has been accredited by NAAC with “A” grade and NBA. The institution is also accredited by TATA consultancy services. The college has a good placement record with students getting job offers from top companies in India and abroad. SMVEC students have won many awards and accolades for their academic achievements. To be globally recognized for excellence in quality education, innovation and research for the transformation of lives to serve the society.

Vision

- To nurture the cornerstone of excellence in engineering education and drive innovation by seamlessly integrating the fundamentals of Science and Humanities

Mission

M1: Quality Education : To provide comprehensive academic system that amalgamates the cutting edge technologies with best practices.

M2: Research and Innovation : To foster value-based research and innovation in collaboration with industries and institutions globally for creating intellectuals with new avenues.

M3: Employability and Entrepreneurship : To inculcate the employability and entrepreneurial skills through value and skill based training.

M4: Ethical Values : To instill deep sense of human values by blending societal righteousness with academic professionalism for the growth of society.

ABOUT THE DEPARTMENT

The Department of Electronics and Communication Engineering is a top-notch department that offers high-quality UG, PG and PhD programs. The UG program B.Tech - Electronics and Communication Engineering is accredited by the National Accreditation Board, AICTE-New Delhi, and has a placement record of over 80%. The department's graduates are highly sought-after by employers in the Electronics and Communication sector.

Our department contributes significantly to achieving the national objective of envisioning the world with a clear and deep commitment and a sincere desire to meet the expectations of a rising, fast-developing technology.

Vision

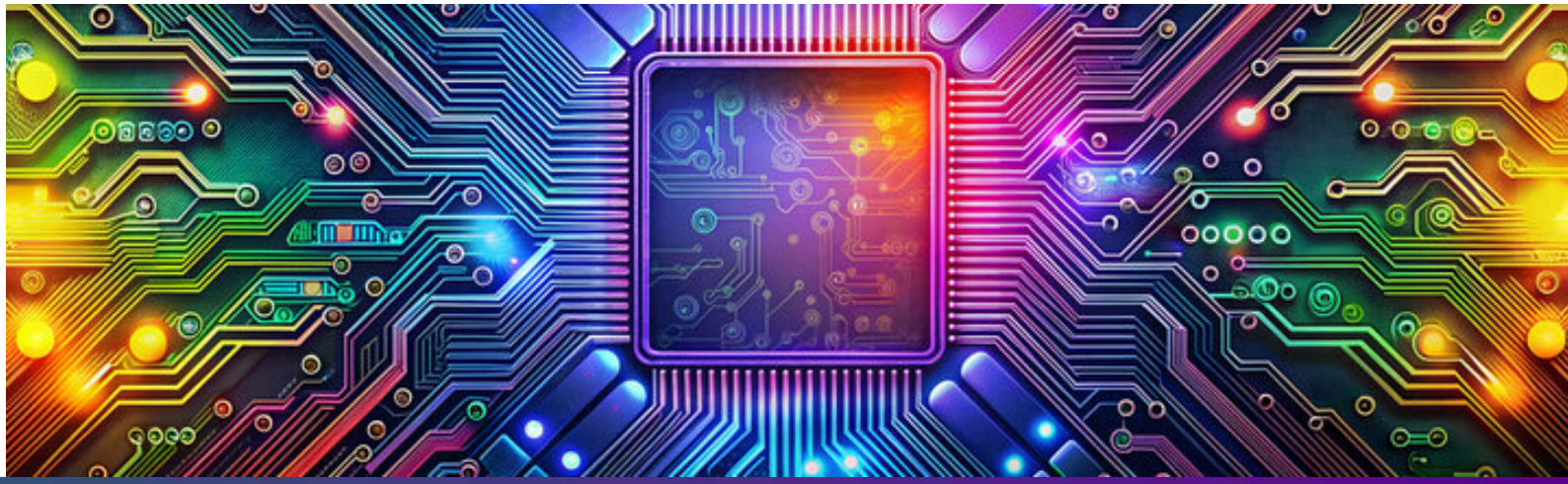
Facilitate academic excellence and research among Electronics and Communication Engineers to meet the global needs with high competence and ethical professionalism.

Mission

- **Academic Excellence:** To impart learning skills to meet the global challenges in the field of Electronics and Communication Engineering.
- **Research and Innovation:** To provide excellence in research and innovation through multidisciplinary specialization.
- **Employability and Entrepreneurship:** To enhance inter and intra personal skills to make them employable and entrepreneurs.
- **Ethics:** To inculcate the significance of human values and professional skills to serve the society.

Programmes offered

- B.Tech - Electronics and Communication Engineering
- M.Tech - Electronics and Communication Engineering
- M.Tech - VLSI & Embedded Systems
- Ph.D - Electronics and Communication Engineering



"Shaping a smarter world through circuits, signals, and systems."

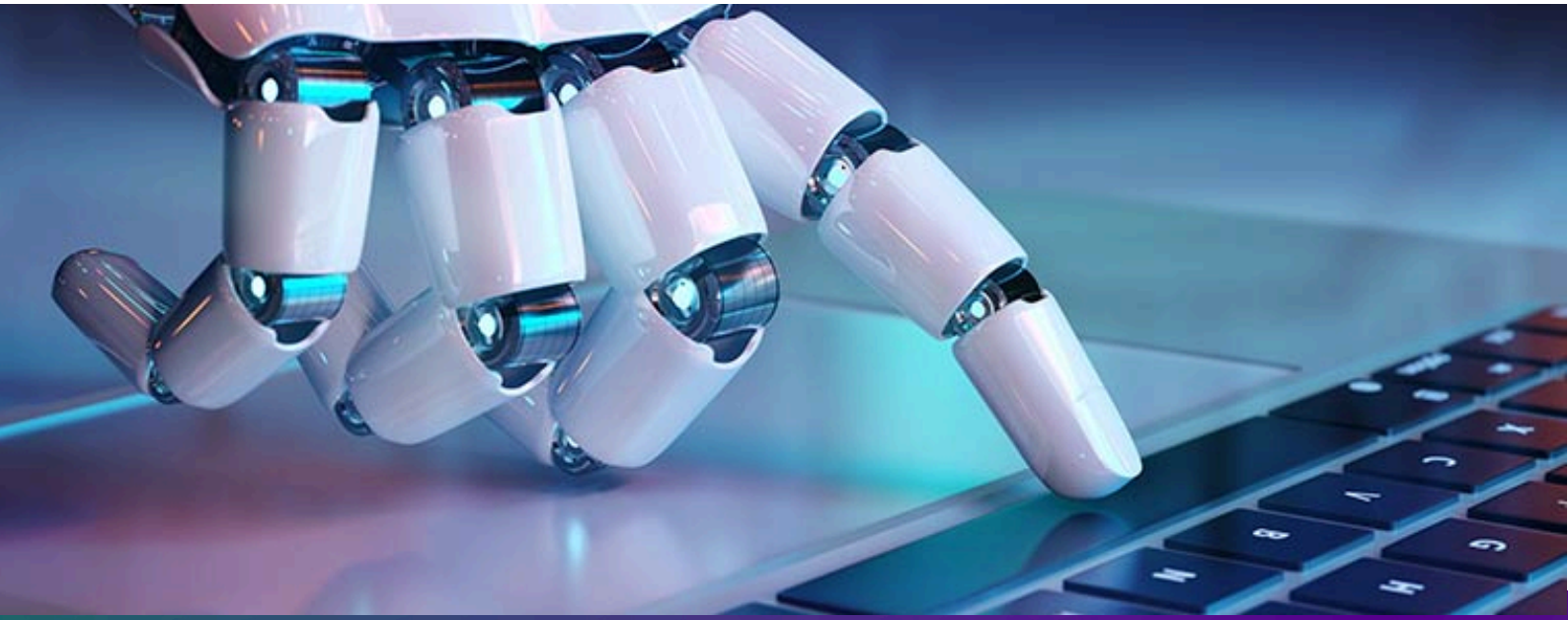
ABOUT ROBOTICS AND AUTOMATION CLUB

The Robotics and Automation Club from the department of ECE is dedicated to exploring cutting-edge advancements in robotics, AI, and automation, with the overarching theme of "Empowering and Innovating the future with the intersection of Robotics and AI." Our club provides a platform for students to apply theoretical knowledge in practical, hands-on projects that encourage critical thinking, teamwork, and problem-solving. From designing autonomous robots to implementing intelligent control systems, club activities span a broad range of real-world applications. Through workshops, competitions, and collaboration with industry experts, the club cultivates technical skills and inspires creativity, preparing students to become leaders in the rapidly advancing fields of robotics and automation.

Objectives of Robotics and Automation Club

The primary goal of robotics club are as follows:

- To foster hands-on skills in designing, building, and programming robots, enabling students to bridge the gap between theoretical concepts and practical applications.
- To encourage innovative thinking and creative problem-solving by challenging students to develop unique robotic and automation solutions.
- To keep members updated on the latest advancements in robotics and automation technologies through workshops, webinars, and expert talks.
- To prepare students for national and international robotics competitions by providing resources, guidance, and a platform for experimentation.
- To inspire research in emerging areas of robotics and automation, such as AI, machine learning, IoT, and human-robot interaction.
- To promote teamwork and collaboration among students from various disciplines for solving complex engineering problems.



"Commanding circuits. Controlling motion. Creating change."

OFFICE BEARERS

The Robotics Club is led by a dedicated team of office bearers who play a vital role in driving the club's activities and fostering a culture of innovation. The team typically includes a President, Vice President, Secretary, Treasurer, and Technical Leads, each bringing unique skills and responsibilities to the table. These office bearers coordinate workshops, manage resources, mentor junior members, and oversee project development. Their leadership ensures smooth operation of the club while encouraging creativity, collaboration, and hands-on learning in the field of robotics. Through their efforts, the club continues to be a hub of technical excellence and a launchpad for future innovators.

Dr. T. Deepa
Assistant Professor
Faculty Coordinator

Joe Maxwell Boniface. D
President
III/B

Sathish Kumar P S
Vice President
III/D

Yuvanesh Balaji M
Secretary
III/D

Devanesh S
Technical Head
III/D

Pratheep P
Creative Head
III/D

LIST OF EVENTS

S. No	Title of the Events
01	International Seminar on “Recent Trends in Use of Robotics in Industrial Automation
02	Line Gripper Bot Demonstration
03	Technical Discussion on Robotics and ECE: Unleashing Innovation in Modern Engineering
04	Bot Modelling Using Design Software’s
05	Workshop on Bot Series: making Bots Using IoT

SEMINAR ON "RECENT TRENDS IN USE OF ROBOTICS IN INDUSTRIAL AUTOMATION

The Robotics and Automation Club have organized an International Seminar titled "Recent Trends in Robotics for Industrial Automation" on 31. 08. 2024 in the virtual mode at auditorium. The event featured Mr. Shripad Deshpande, Assistant Professor from Symbiosis International Deemed University, Pune, as the keynote speaker. He shared invaluable insights into the latest advancements in robotics, particularly within the realm of industrial automation, highlighting cutting-edge technologies, applications, and future trends. The seminar also explored ongoing research activities and emerging job opportunities in the field, aiming to deepen students' technical understanding of robotics in electronics. Additionally, it fostered interest in industrial automation and encouraged active engagement with the resource person for meaningful knowledge exchange.

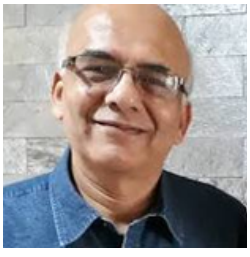
- Total Number of Participants : 300
- Year of students: III and II
- Venue : SMVEC Auditorium
- Date : 31/08/2024
- Event Coordinator: Dr. T. Deepa
- Mode of seminar: Online

Objective of the Seminar

- The primary objective of this event is to highlight the significance of robotics in industrial automation and to share a glimpse of job opportunities in the field of robotics with the students.
- To enhance the technical knowledge of students about robotics in electronics.
- To create interest among the students towards industry automation.
- To make the students interact with the resource person for knowledge transfer.

Outcome of the Seminar

- To enhance the technical knowledge of students about robotics in electronics.
- To create interest among the students towards industry automation.
- To make the students interact with the resource person for knowledge transfer.



Resource Person
Mr. Shripad Deshpande
Assistant Professor
Symbiosis International Deemed University, Pune

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SRI MANAKULA VINAYAGAR ENGINEERING COLLEGE

Department of Electronics and Communication Engineering

SMVEC/ECE/SC/32.3/2024-25/001 **29. 08. 2024**

CIRCULAR

We would like to inform you that the **"Robotics and Automation Club"**, part of the Department of Electronics and Communication Engineering, has planned to conduct a seminar on **"Recent Trends in Use of Robotics in Industrial Automation"** for the second-year students (150 students) on August 31, 2024 at 2.00 Pm. Students are hereby instructed to participate in the event and enhance their technical knowledge in industrial automation.

Resource Person: Mr. Shripad Deshpande
Designation: Assistant Professor
University : Symbiosis International Deemed University, Pune.
Academic Experience: 10 years
Industry Experience: 24 years

29/8/24

Robotics Club Coordinator
(Dr. T. Deepa)

Overall Club Coordinator
(Dr. C. A. Sathiya Moorthy)

HOD / ECE
(Dr. P. Raja)

POSTER

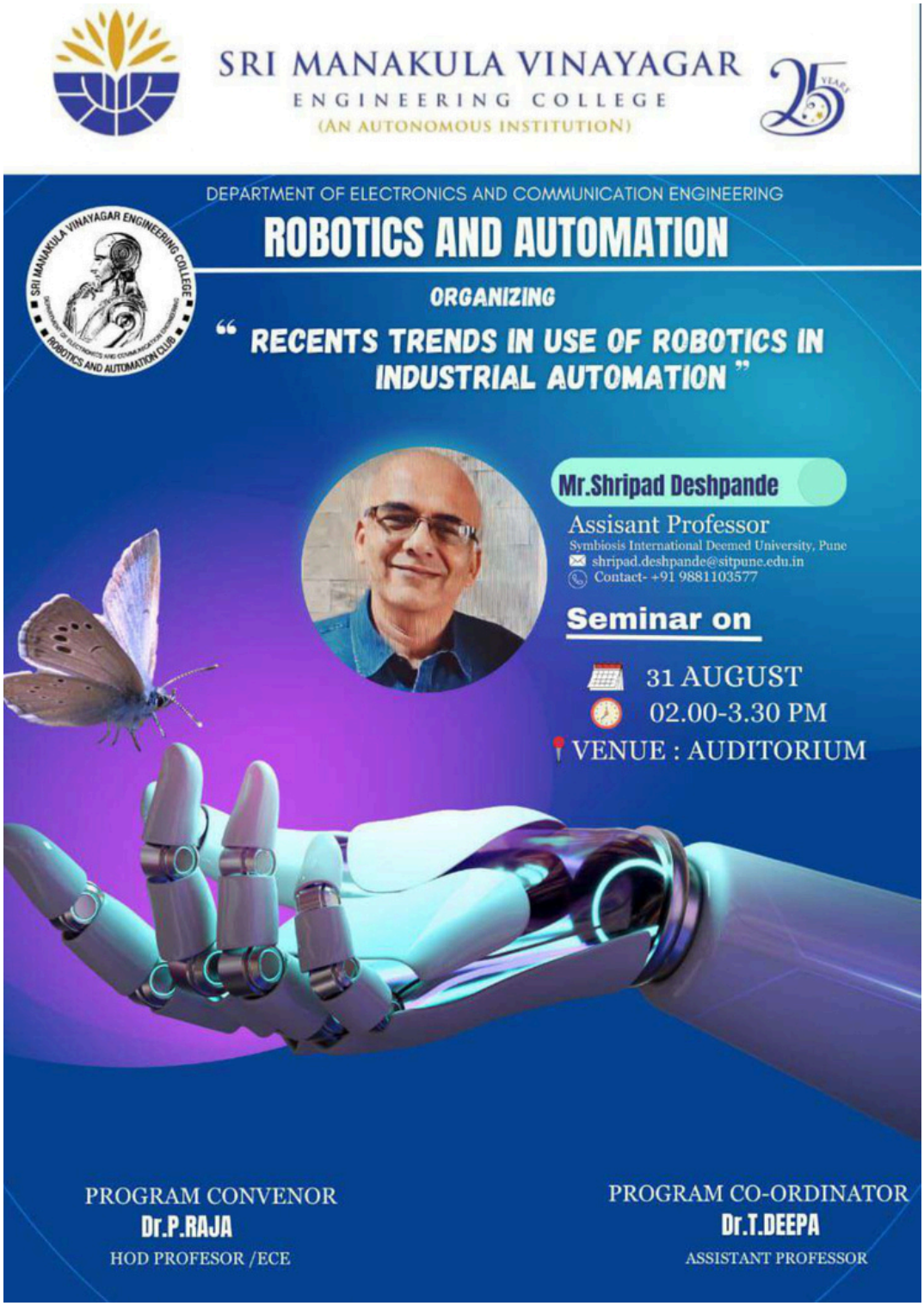
SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE
(AN AUTONOMOUS INSTITUTION)
25 YEARS
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
ROBOTICS AND AUTOMATION
ORGANIZING
" RECENTS TRENDS IN USE OF ROBOTICS IN INDUSTRIAL AUTOMATION "
Mr.Shripad Deshpande
Assisant Professor
Symbiosis International Deemed University, Pune
shripad.deshpande@sitpune.edu.in
Contact- +91 9881103577
Seminar on
31 AUGUST
02.00-3.30 PM
VENUE : AUDITORIUM
PROGRAM CONVENOR
Dr.P.RAJA
HOD PROFESOR /ECE
PROGRAM CO-ORDINATOR
Dr.T.DEEPA
ASSISTANT PROFESSOR

PHOTO GALLERY

LINE GRIPPER BOT DEMONSTRATION

The Robotics and Automation Club recently has organized a Line Gripper Bot demonstration activity for the first-year students to make them understand the significance of robotics in real-world applications. Also, during the activity, the students volunteered themselves to operate the bot and gained practical knowledge of Line Gripper operation.

- Total Number of Participants : 60
- Year of students: I
- Date: 8/10/2024 &14/10/2024
- Venue : 315
- Event Coordinator: Dr. T. Deepa
- Mode of activity: Offline
-

Objective of the Activity

- To inculcate interest among the freshers to involve themselves in the field of robotics
- To enhance the technical knowledge of students about robotics in electronics.
- To create interest among the students towards industry automation.
- To make the students interact with the resource person for knowledge transfer.

Overview of the Activity

The Robotics and Automation Club recently organized a practical demonstration session titled "Line Gripper Bot Activity" for first-year students, aiming to bridge theoretical concepts with real-world applications of robotics. The event was conducted in Room 314 in offline mode with active participation from 60 students. The session was led by club representatives S. Yuvanesh Balaji and S. Devanesh, who volunteered to guide the students throughout the activity. The program began with an introductory discussion on the fundamentals of robotics to engage and build rapport with the attendees. Following the discussion, a live demonstration of the Line Gripper Bot was carried out. The presenters explained the design, functionality, and practical applications of the bot in detail. Students were then invited to operate the bot themselves, gaining valuable hands-on experience in its working mechanism. To conclude the session, participants took part in assembling the robot using the line gripper components. This interactive and collaborative segment sparked significant enthusiasm and curiosity among the students, encouraging further interest in robotics and automation.

Outcome of the Event

- Students gained practical knowledge of robotics concepts through direct interaction with the Line Gripper Bot.
- Participants successfully assembled and operated the bot, improving their technical confidence and skills.
- The session sparked curiosity and enthusiasm among first-year students toward robotics and automation.
- The activity encouraged teamwork and peer learning, fostering a collaborative learning environment within the club.

CIRCULAR

SRI MANAKULA VINAYAGAR ENGINEERING COLLEGE
(AN AUTONOMOUS INSTITUTION)

Department of Electronics and Communication Engineering

SMVEC/ECE/SC/32.3/2024-25/002 07. 08. 2024

CIRCULAR

We would like to inform you that the "**Robotics and Automation Club**", part of the Department of Electronics and Communication Engineering, has planned to host a technical discussion on "Line Gripper Bot Demonstration" for First year students (Sections A and D) on October 8, 14, 2024 Students are hereby instructed to participate in the event and enhance their technical knowledge.

Date	Year/Sem/Sec	Planned activity	Hour	Student coordinator	Staff In-charge
8/10/2024	III/V/D	Line Gripper Bot Demonstartion	7th,8th	JOE MAXWEELL V/III/B YUVASHAKTHI V/III/B HARISH M V/III/B GOWTHAM J V/III/A	Dr. T Deepa (Asst prof/ECE)
14/10/2024	III/V/A		5th, 6th	DEVANESH S V/III/D HARINIVASINI P V/III/D SANTHOSH S V/III/D PRATHEEP P V/III/D	

Staff Incharge (Dr. T. Deepa)

Overall CLUB Coordinator (Dr. C. A. Sathiya Moorthy)

HOD / ECE (Dr. P. Raja)

PHOTO GALLERY

PHOTO GALLERY

TECHNICAL DISCUSSION ON "ROBOTICS AND ECE: UNLEASHING INNOVATION IN MODERN ENGINEERING"

The Robotics and Automation Club recently has organized a Line Gripper Bot demonstration activity for the first-year students to make them understand the significance of robotics in real-world applications.

- Total Number of Participants : 60
- Year of students: I
- Date: 9/11/2024
- Venue : 312
- Mode of Activity: Offline

Objective of the Activity

- To introduce first-year students to the interdisciplinary nature of Robotics and Electronics & Communication Engineering (ECE).
- To provide insights into how ECE concepts are applied in modern robotic systems.
- To create awareness about the career opportunities and future scope in the field of robotics and automation.
- To encourage active student participation in technical discussions and club activities.

Overview of the Activity

The Robotics and Automation Club organized a technical discussion titled "Robotics and ECE: Unleashing Innovation in Modern Engineering" exclusively for first-year students. The session aimed to bridge the gap between foundational electronics and emerging trends in robotics. The session was coordinated by the club representatives and featured a keynote discussion by Harish T, a third-year student, who elaborated on the strong interconnection between the ECE domain and Robotics. He discussed how core subjects such as embedded systems, sensors and actuators, signal processing, and communication technologies play a crucial role in the design and functioning of robotic systems. Harish also highlighted the growing industry demand for robotics skills and shared insights into various application areas, including automation, healthcare robotics, defense, and smart systems. The interactive nature of the session helped first-year students understand the practical relevance of their academic subjects and sparked their interest in exploring robotics further.

Outcome of the Activity

- Academic Relevance Realized: First-year students gained clarity on how core ECE subjects directly contribute to real-world robotics applications.
- Industry Insight Gained: The session provided valuable exposure to current trends and career opportunities in robotics across multiple sectors.
- Interest & Engagement Boosted: The interactive discussion inspired students to explore robotics more actively, fostering curiosity and motivation for future involvement in the club.

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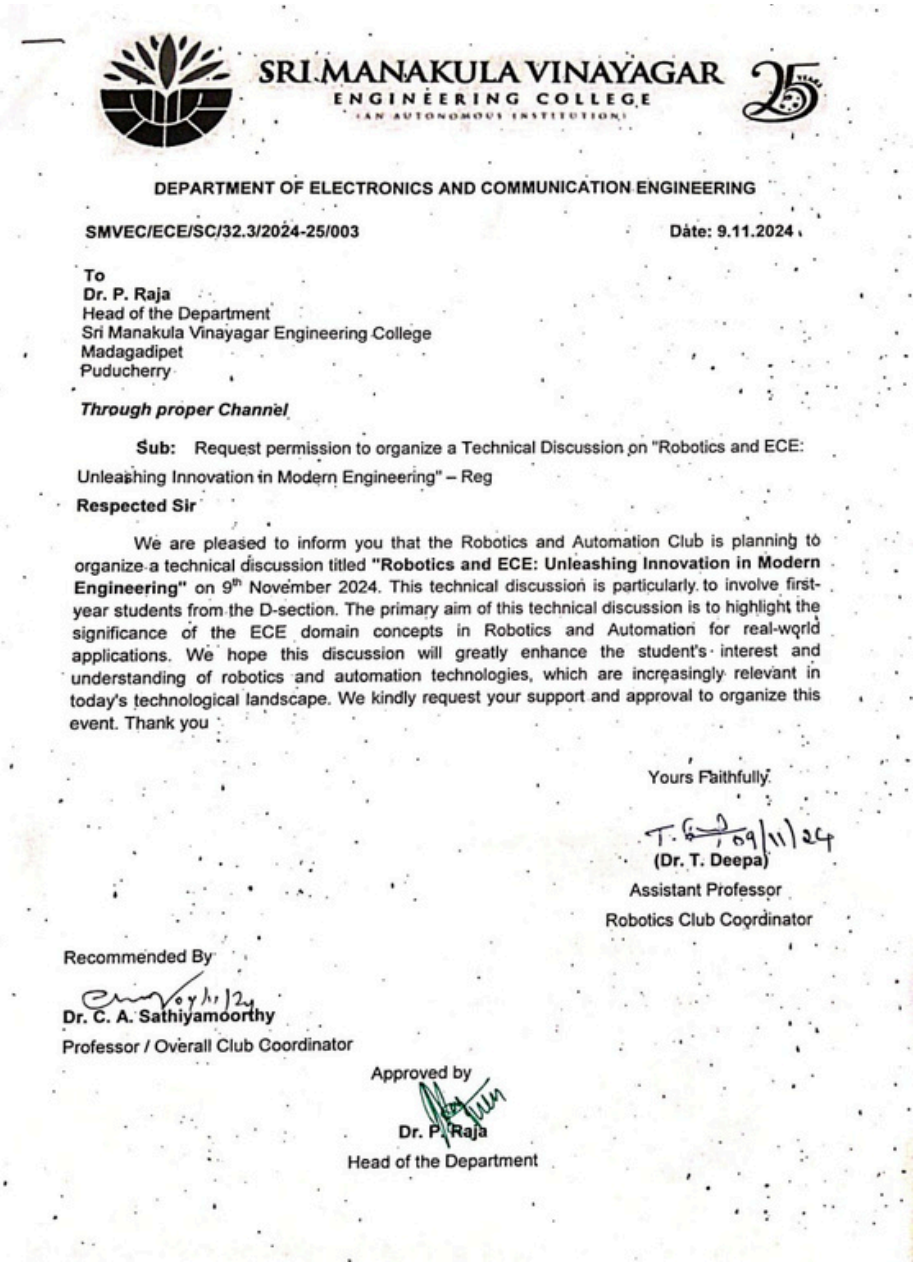

SRI MANAKULA VINAYAGAR ENGINEERING COLLEGE
(AN AUTONOMOUS INSTITUTION)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SMVEC/ECE/SC/32.3/2024-25/003 Date: 9.11.2024

To
Dr. P. Raja
Head of the Department
Sri Manakula Vinayagar Engineering College
Madagadipet
Puducherry

Through proper Channel

Sub: Request permission to organize a Technical Discussion on "Robotics and ECE: Unleashing Innovation in Modern Engineering" – Reg

Respected Sir

We are pleased to inform you that the Robotics and Automation Club is planning to organize a technical discussion titled **"Robotics and ECE: Unleashing Innovation in Modern Engineering"** on 9th November 2024. This technical discussion is particularly to involve first-year students from the D-section. The primary aim of this technical discussion is to highlight the significance of the ECE domain concepts in Robotics and Automation for real-world applications. We hope this discussion will greatly enhance the student's interest and understanding of robotics and automation technologies, which are increasingly relevant in today's technological landscape. We kindly request your support and approval to organize this event. Thank you

Yours Faithfully

09/11/24
(Dr. T. Deepa)
Assistant Professor
Robotics Club Coordinator

Recommended By

Dr. C. A. Sathiyamoorthy
Professor / Overall Club Coordinator

Approved by

Dr. P. Raja
Head of the Department

PHOTO GALLERY

TECHNICAL DISCUSSION ON "ROBOT DESIGN CHALLENGE"

The Robotics and Automation Club organized a technical discussion for first-year students focused on the design challenges in modern robotics. This session was aimed at introducing freshers to the complexities and innovations involved in building robots for present-day applications. Senior club members conducted the session and shared valuable insights into both theoretical and practical aspects of robot design. During the session, the speakers elaborated on key challenges in robotics design, such as achieving precise motion control, balancing power consumption with performance, and ensuring sensor accuracy in unpredictable environments. They also addressed the difficulty of integrating hardware and software seamlessly, especially in autonomous systems where real-time decision-making is critical. Attention was drawn to mechanical constraints, such as weight distribution, material selection, and compactness in mobile robots. Furthermore, the discussion highlighted cost-effectiveness, scalability, and robustness as essential considerations for real-world deployment. The session also emphasized the importance of interdisciplinary knowledge — combining electronics, communication systems, mechanical design, and computer programming — to overcome these challenges. Through real-world examples and project experiences, the senior members inspired students to approach robotics not just as a technical task, but as a creative problem-solving process that mirrors modern engineering innovation.

- Total Number of Participants : 60
- Year of students: II
- Date: 02/01/2025
- Venue : 316
- Mode of Activity: Offline

Objective of the Activity

- To familiarize first-year students with the current trends and demands in robotic design.
- To explain the technical and functional challenges faced in designing robots for real-world applications.
- To raise awareness about the role of automation and robotic assistance in emerging industries and technologies.
- To motivate and encourage participation in future robotics-related activities and projects.

Outcome of the Activity

- Students gained a clear understanding of the key design challenges, such as hardware integration, sensor fusion, mobility, AI control, and power management in robotics.
- Participants were introduced to real-world applications of robotics in healthcare, logistics, manufacturing, and service sectors.
- The session helped ignite interest among first-year students, many of whom expressed enthusiasm to engage in club activities and pursue further learning in robotics and automation.
- A platform was created for interactive learning and peer engagement, building a stronger foundation for the next generation of robotics enthusiasts.

CIRCULAR

SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE
(AN AUTONOMOUS INSTITUTION)

Department of Electronics and Communication Engineering

SMVEC/ECE/SC/32.3/2024-25/005 **31.01.2025**

CIRCULAR

We would like to inform you that the **"Robotics and Automation Club"**, part of the Department of Electronics and Communication Engineering, has planned to host a technical discussion on **"ROBOT DESIGN CHALLENGE"** for first-year students (D-section) on 1st February, 2025. Students are hereby instructed to participate in the event and enhance their technical knowledge. I also request the faculty members to allow the below student coordinators to conduct the event successfully.

Date	Year/ Sem/ Sec	Planned activity	Hour	Student coordinator	Staff In-charge
01/02/2025	I/II/D	Robot Design challenge Discussion	3rd, 4th and 5th	Joe maxwell V/III/B Pratheep V/III/B Rohit Kishore V/III/C Ritheesh V/III/C	Dr. T Deepa (Asst prof/ECE)

31/01/25

Staff Incharge
(Dr. T. Deepa)

Overall CLUB Coordinator
(Dr. C. A. Sathiya Moorthy)

HOD/ ECE
(Dr. P. Raja)

PHOTO GALLERY

BOT MODELLING USING SOFTWARE

The Robotics and Automation Club conducted a technical session on "Bot Modelling Using Software" to introduce first-year students to the fundamentals of digital robot design. The session aimed to demonstrate how software tools are utilized to model, simulate, and refine robotic systems before physical implementation. Club members showcased various software platforms and explained their importance in the development cycle of a robot. The Robot Simulation & Modeling Platforms are taught to learn and to design, simulate, and test robots in virtual environments.

1. Gazebo – Popular open-source 3D robotics simulator often used with ROS (Robot Operating System).
2. Webots – Open-source tool for modeling, programming, and simulating mobile robots.
3. V-REP – A powerful simulator with integrated physics and support for a wide range of robots.
4. Microsoft Robotics Developer Studio – Offers simulation and visual programming tools (discontinued but still referenced in academia).
5. MORSE – Modular simulator designed for academic research, built on Blender.

- Total Number of Participants : 60
- Year of students: I
- Date: 01/02/2025
- Venue : 315
- Mode of Activity: Offline

Objective of the Activity

- To introduce students to the concept of virtual modelling and simulation in robotics.
- To demonstrate the use of robot design software tools such as SolidWorks, Fusion 360, or simulation platforms like Gazebo and MATLAB.
- To highlight the importance of digital prototyping in minimizing errors and optimizing robot performance.
- To encourage students to explore CAD and simulation tools as essential skills in the field of robotics.

Outcome of the Activity

- Students developed an understanding of how software tools assist in the conceptualization and design of robotic systems.
- Participants learned the advantages of modelling and simulation, including cost-effectiveness, time efficiency, and testing under various conditions.
- The session sparked interest in learning design tools, with many students expressing willingness to undertake further training or mini-projects using modelling software.
- The event contributed to building a technical foundation among new members, equipping them with knowledge essential for future hands-on robotics projects.

CIRCULAR

SRI MANAKULA VINAYAGAR ENGINEERING COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SMVEC/ECE/SC/32.3/2024-25/007 **Date: 22.03.2025**

To
Dr. P. Raja
Head of the Department
Sri Manakula Vinayagar Engineering College
Madagadipet,
Puducherry

Through proper ***Channel***

Sub: Requesting permission to organize an activity, BOT Modelling Using Software Discussion--Reg

Respected Sir

We are pleased to inform you that the Robotics and Automation Club is planning to organize a technical robot design challenge discussion titled **"BOT MODELLING USING SOFTWARE"** on 22nd March 2025. This technical discussion particularly involves first-year students from the C section. The primary aim of this technical discussion is to highlight the design challenge in robotics for real-world applications and providing guidelines to design a basic robot using budget friendly components. We hope this discussion will greatly enhance the student's interest and understanding of robotics and automation technologies, which are increasingly relevant in today's technological landscape. We kindly request your support and approval to organize this event. Thank you

Yours Faithfully

(Dr. T. Deepa)
Assistant Professor /
Robotics Club Coordinator

Recommended By

Dr. C. A. Sathiyamoorthy
Professor / Overall Club Coordinator

Approved by

Dr. P. Raja
Head of the Department

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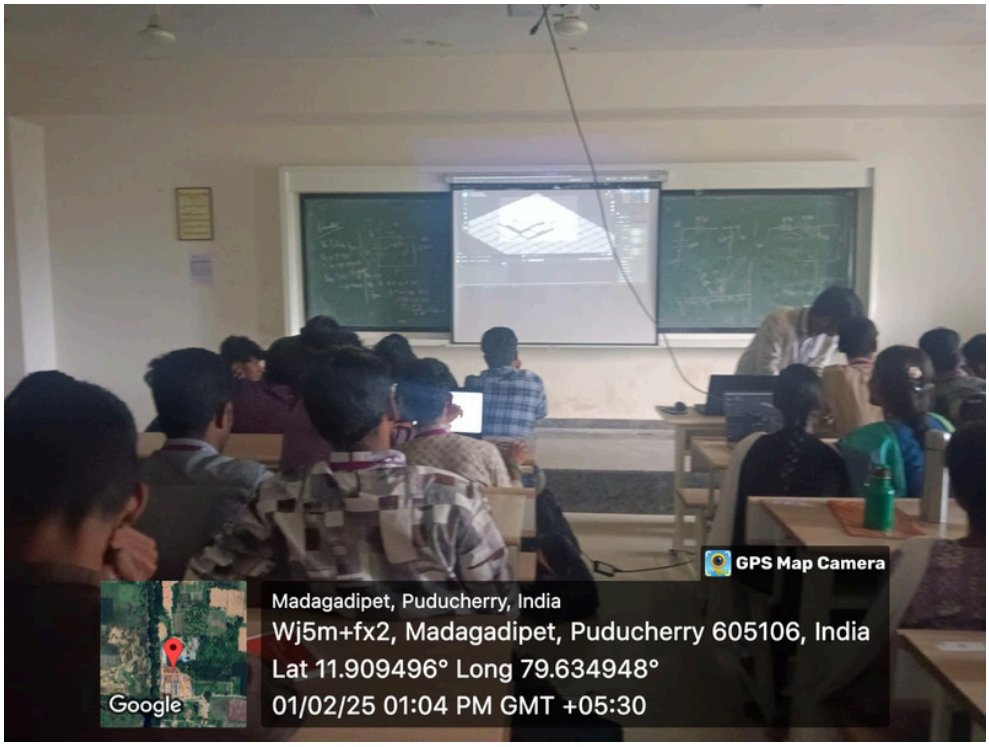


WORKSHOP ON BOT SERIES: MAKING BOTS USING IOT

The workshop titled 'BOT SERIES: Making Bots Using IoT' was jointly organized by IETE Student forum and Robotics and Automation Club from the department of Electronics and Communication Engineering. The event aimed to provide students with hands-on experience in building and programming bots using Internet of Things (IoT) technologies. Also, the workshop focused on designing, building, and programming IoT-enabled bots for automation, smart control, and remote monitoring applications such that students can understand the challenges in designing in robots according to the application. Theworkshop fostered designing an IoT-enabled bot using Arduino/ESP32, Interfacing sensors and actuators, implementing wireless communication for remote control.

- Total Number of Participants : 50
- Year of students: II and III
- Date: 26/02/2025 to 27/02/2025
- Venue : 309
- Mode of Activity: Offline
- Event Coordinator: Dr. N. Saranya and Dr. T. Deepa

Resource Person
Mr. M. Ashok Kumar
Founder of Praya Labs and Funobots
Research and Development
Praya labs, Tiruvanamalai.

Mr. Ashokkumar Manisekaran is an experienced Entrepreneur and Technical Trainer with a strong background in training and skill development for undergraduate and postgraduate candidates. Currently leading Praya Labs since January 2018, Ashokkumar specializes in creating curricula for professional courses in augmented reality and virtual reality development using tools like Unity 3D and Unreal Engine, as well as syllabus development for children's 3D design courses. With over a decade of freelance training experience, Ashokkumar's technical expertise spans various languages, platforms, and technologies, including data science, artificial intelligence, and IoT. Previously, Ashokkumar served as an Assistant Professor at Arunai Engineering College from August 2012 to October 2017, focusing on curriculum development, project mentorship, and placement activities. Ashokkumar holds a Master of Engineering and a Bachelor of Engineering, both in Computer Science Engineering, from Anna University Chennai.

BRIEF REPORT ABOUT WORKSHOP

The Robotics and Automation Club and the IETE Student Forum of the Department of Electronics and Communication Engineering successfully organized a one-day workshop titled "BOT SERIES M: Making Bots Using IoT" on 26th February 2025 at Sri Manakula Vinayagar Engineering College. The workshop was designed to provide students with hands-on experience in building IoT-enabled robotic systems and to enhance their knowledge of ESP32 modules, Arduino boards, and IoT-based automation technologies.

Inauguration and Welcome Address

The workshop commenced with a formal inaugural session, where Dr. N. Saranya, Assistant Professor, ECE, delivered the welcome address, extending her warm greetings to the chief guest, faculty members, and student participants. She emphasized the importance of IoT and robotics in modern technology-driven industries and how this workshop would equip students with practical skills for designing smart bots. Following the welcome address, the chief guest, Mr. Ashok Kumar, Founder of Praya Labs, was honored by Dr. R. Kurinjimalar, Professor, ECE, and Dr. S.B. Lenin, Associate Professor, ECE, in recognition of his expertise and contributions in the field of robotics, IoT, and automation technologies.

Workshop Objectives and Learning Outcomes

The primary objective of the workshop was to enable participants to design, develop, and program IoT-based bots using modern microcontrollers and sensor modules. The session focused on:

- Understanding the fundamental concepts of IoT and its applications in robotics.
- Gaining practical knowledge in working with ESP32 microcontroller modules, Arduino boards, and other essential IoT hardware.
- Learning software installation and programming techniques to control and automate robotic systems.
- Constructing a functional IoT-enabled bot prototype, integrating real-time sensors and cloud-based control.

Technical Sessions Conducted by Mr. Ashok Kumar

The technical session was led by Mr. Ashok Kumar, Founder of Praya Labs, who provided comprehensive hands-on training on IoT-based bot development.

Session 1: Software Installation and Configuration Mr. Ashok Kumar initiated the session by guiding participants through the software installation process necessary for programming and interfacing the IoT modules. The ession covered: Setting up the Arduino IDE and ESP32 libraries. Configuring IoT communication protocols for real-time data exchange. Troubleshooting and resolving issues encountered during software installation. He ensured that all participants were able to successfully install and configure the required software tools, addressing their queries and concerns during the setup process.

Session 2: Fundamental Concepts and Interactive Discussion.

Once the software setup was completed, Mr. Ashok Kumar explained the fundamental concepts of IoT, robotics, and automation. He facilitated a highly interactive session, where students had the opportunity to relate theoretical concepts from their academic curriculum to real-world applications.

Key topics covered in this session included:

- Basics of IoT-enabled robotics and its advantages over traditional automation.
- Introduction to sensor interfacing, data transmission, and cloud integration.
- Real-time applications of IoT-based automation in smart homes, healthcare, and industrial sectors.
- Students actively participated in discussions and clarified their doubts regarding hardware selection, coding, and implementation challenges**.**

Session 3: Prototype Development – Building IoT Bots

In the final phase of the workshop, participants were engaged in designing and constructing IoT-enabled bot prototypes. Under the guidance of Mr. Ashok Kumar, students applied their learning to:

- Assemble and wire the components of their bots.
- Write and upload IoT-based control programs.
- Test the functionalities and troubleshoot errors in their prototype models.

By the end of the session, each participant had successfully developed a working prototype of an IoT-enabled bot, demonstrating their ability to integrate hardware and software components in a real-time automation project.

The BOT SERIES : Making Bots Using IoT workshop was highly successful in enhancing students' technical knowledge and practical skills in IoT, robotics, and automation. The hands-on approach, interactive discussions, and expert guidance by Mr. Ashok Kumar provided an enriching learning experience. The event concluded with positive feedback from the participants, who appreciated the structured learning process, real-time implementation, and problem-solving exercises conducted during the workshop.

The Robotics and Automation Club and IETE Student Forum the extended their heartfelt gratitude to Mr. Ashok Kumar for his valuable contributions, and to faculty members and student coordinators for their efforts in organizing the event.

With such successful workshops, the Department of Electronics and Communication Engineering aims to continue nurturing technical excellence among students and preparing them for future advancements in IoT-based automation and robotics.

POSTER

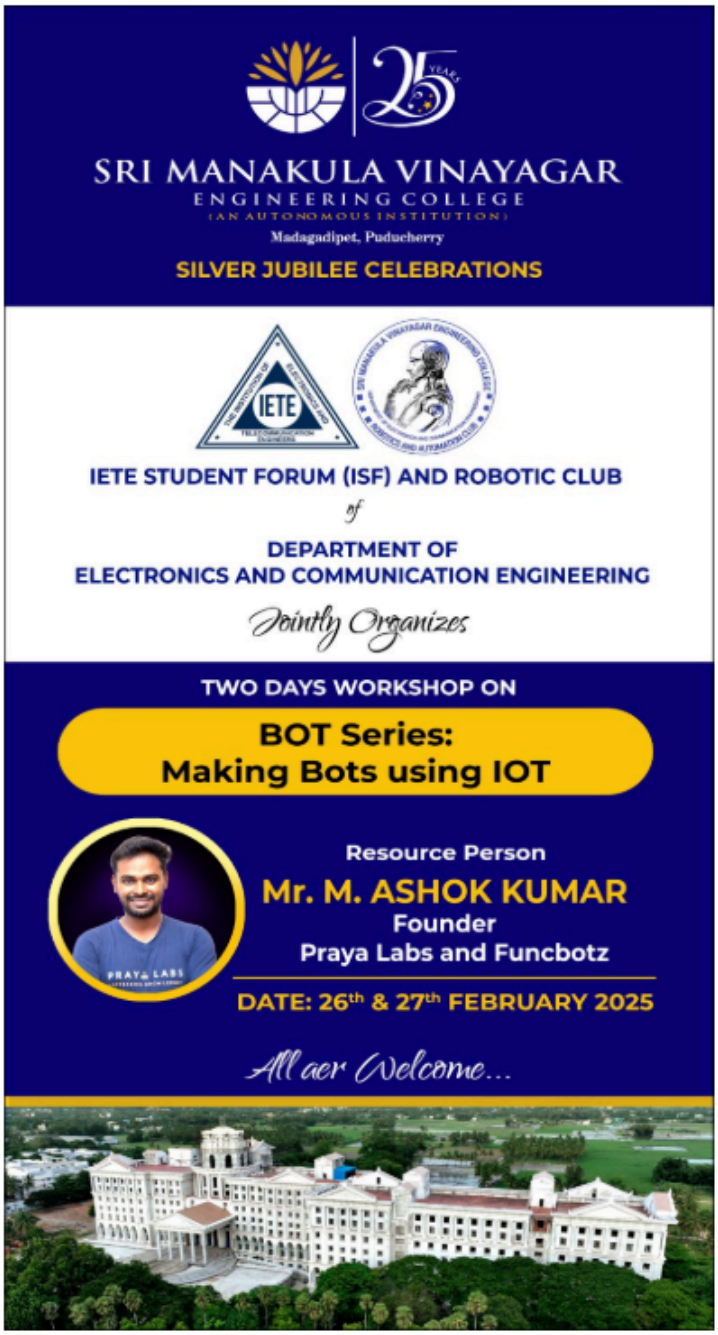
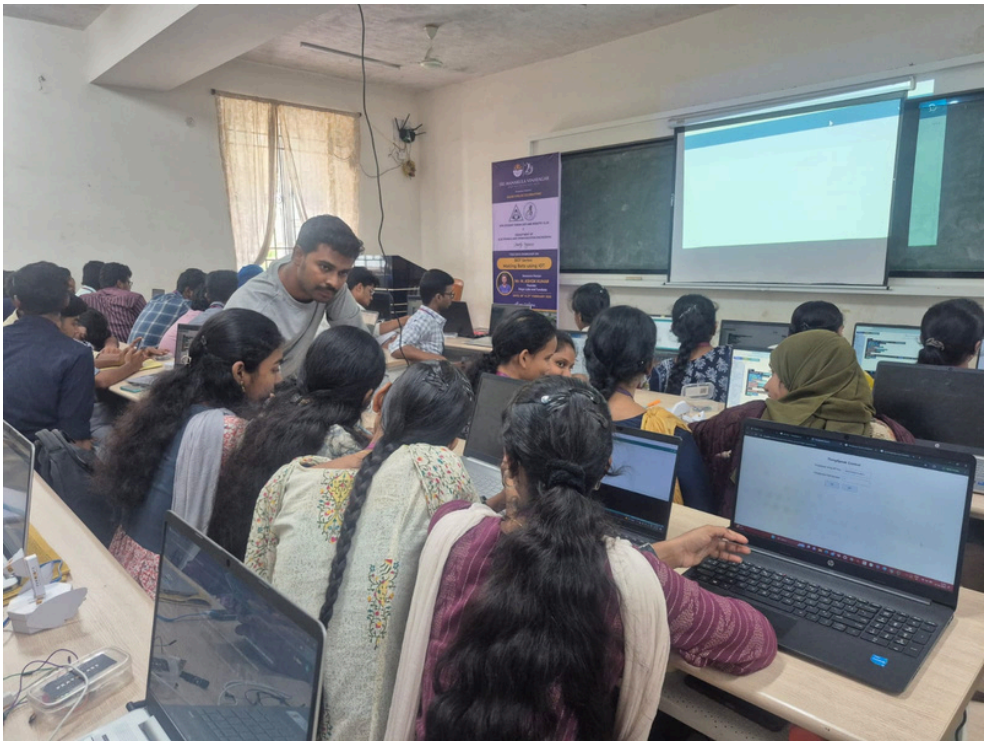
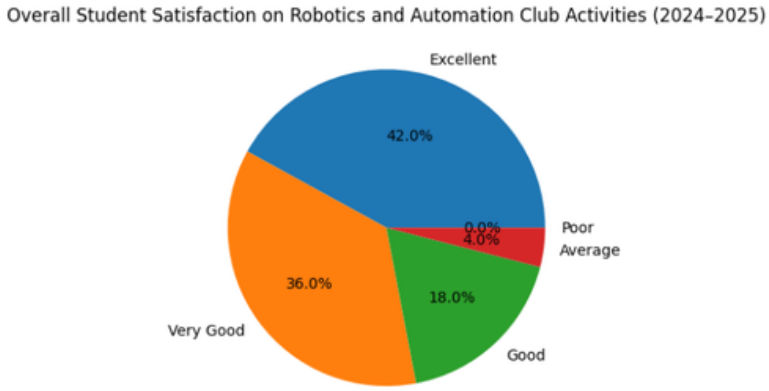

25 YEARS
SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE
(AN AUTONOMOUS INSTITUTION)
Madagadipet, Puducherry
SILVER JUBILEE CELEBRATIONS
IETE
IETE STUDENT FORUM (ISF) AND ROBOTIC CLUB
of
DEPARTMENT OF
ELECTRONICS AND COMMUNICATION ENGINEERING
Jointly Organizes
TWO DAYS WORKSHOP ON
BOT Series:
Making Bots using IOT
Resource Person
Mr. M. ASHOK KUMAR
Founder
Praya Labs and Funcbotz
DATE: 26th & 27th FEBRUARY 2025
All are Welcome...

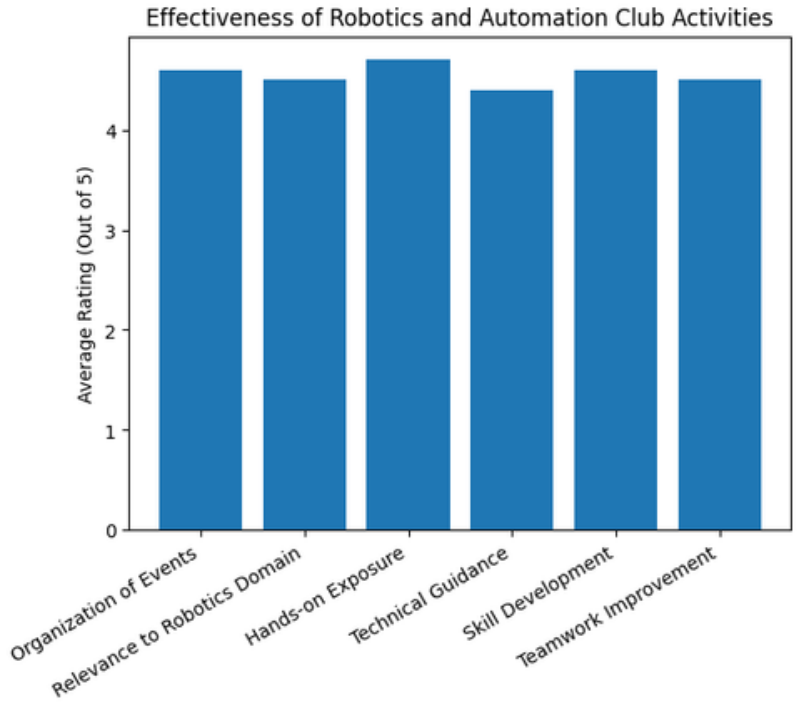
PHOTO GALLERY



STUDENT FEEDBACK

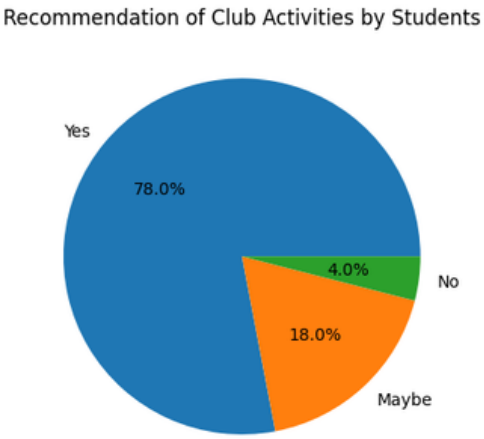


The pie chart depicts the overall satisfaction level of students regarding the Robotics and Automation Club activities conducted during the academic year 2024–2025. It is observed that 78% of students rated the activities as Excellent or Very Good, indicating a high level of satisfaction. Only 4% rated the activities as Average, and no negative feedback was recorded.



The bar chart represents the average ratings given by students for various effectiveness parameters. The ratings are consistently above 4.4 out of 5, highlighting the club's strong performance in event organization, hands-on exposure, skill development, and teamwork enhancement. The highest rating was observed for hands-on exposure, reflecting the practical orientation of the club activities.

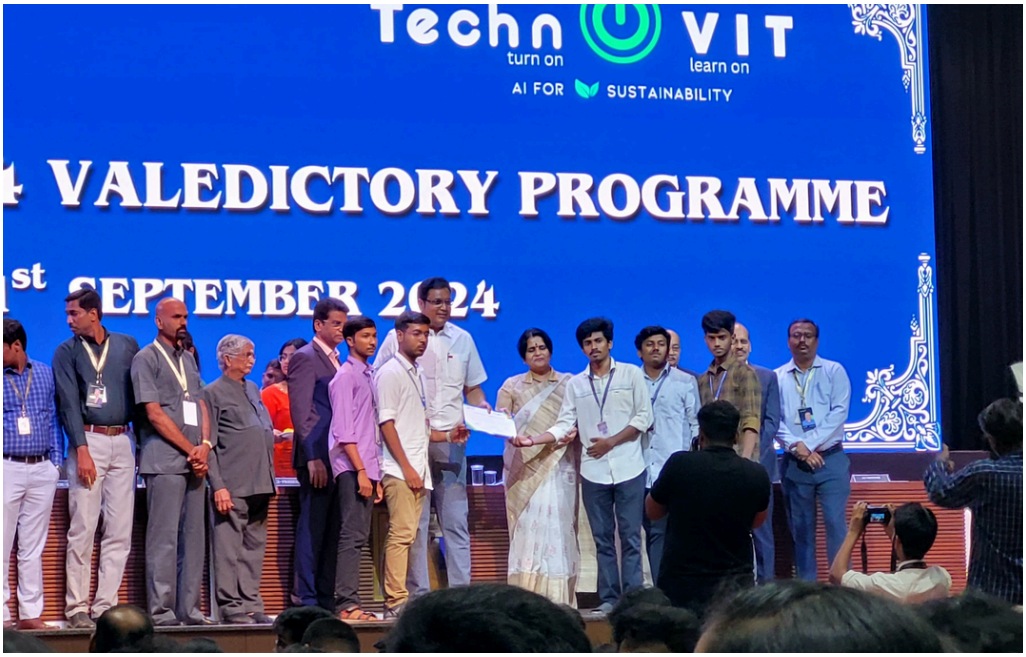
STUDENT FEEDBACK



The pie chart shows that 78% of students are willing to recommend the Robotics and Automation Club activities to other students, while 18% expressed conditional interest. This clearly demonstrates the positive perception and value of the club among students

ROBOTICS CLUB STUDENTS ACHIEVEMENTS

Students from the Robotics Club have actively participated in various national, international, and inter-collegiate events, achieving notable success and winning several prizes. Highlights of their achievements are showcased above.



ROBOTICS CLUB STUDENTS ACHIEVEMENTS


VENUE:
AUDITORIUM

FUTURE PLAN OF ACTION

- Planning to organize a intra department robot race event by mentoring the first year students by student club members.
- Guest lecture on Role of robotics and AI in future applications
- Hands-on activity to assemble a simple robot kit (e.g., a line follower or obstacle avoider).
- Robot race competition