



SJM Vidyapeetha ®

**SJM INSTITUTE OF TECHNOLOGY**

(Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi,  
Accredited by the NAAC with "B++ Grade")  
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**DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING**



**A Report on  
ARTIFITIAL INTELLIGENCE  
WORKSHOP**

**Related to SDG No.(s)**

**03,04,09,11**

**28<sup>th</sup> November-2025**

**Organized By**

**DEPARTMENT OF ELECTRONICS &  
COMMUNICATION ENGINEERING**

**In collaboration with**

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## Program Outcomes & Program Specific Outcomes

### **Program Outcomes :**

**PO1: Engineering Knowledge:** Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

**PO2: Problem Analysis:** Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4).

**PO3: Design/Development of Solutions:** Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

**PO4: Conduct Investigations Of Complex Problems:** Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

**PO5: Engineering Tool Usage:** Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

**PO6: The Engineer and The World:** Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5 and WK7).

**PO7: Ethics:** Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

**PO8: Individual and Collaborative Team work:** Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

**PO9: Communication:** Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences.

**PO10: Project Management and Finance:** Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

**PO11: Life-Long Learning:** Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change (WK8).

## **Program Specific Outcomes:**

**PSO 1:** Analyse and Design Electronic Systems for Signal Processing and Communication Applications.

**PSO 2:** Demonstrate the Conceptual Domain Knowledge With Respect to Architecture, Design, Analysis and Engineering deployment in Data Communication and Computer Networking. Embedded system. Microcontroller, Advanced communication system.

**PSO 3:** Identify and Apply Domain Specific Tools For Design, Analysis, Synthesis and Validation Of VLSI, Optical Fiber Communication and Communication Systems.

## **Sustainable Development Goals (SDGs)**

- 1. No Poverty:** End poverty in all its forms everywhere.
- 2. Zero Hunger:** End hunger, achieve food security, and promote sustainable agriculture.
- 3. Good Health and Well-being:** Ensure healthy lives and promote well-being for all ages.
- 4. Quality Education** – Ensure inclusive and equitable quality education and promote lifelong learning.
- 5. Gender Equality:** Achieve gender equality and empower all women and girls.
- 6. Clean Water and Sanitation:** Ensure availability and sustainable management of water and sanitation.
- 7. Affordable and Clean Energy:** Ensure access to affordable, reliable, sustainable, and modern energy.
- 8. Decent Work and Economic Growth:** Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
- 9. Industry, Innovation, and Infrastructure:** Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
- 10. Reduced Inequalities** – Reduce inequality within and among countries.
- 11. Sustainable Cities and Communities:** Make cities and human settlements inclusive, safe, resilient, and sustainable.
- 12. Responsible Consumption and Production:** Ensure sustainable consumption and production patterns.
- 13. Climate Action:** Take urgent action to combat climate change and its impacts.
- 14. Life Below Water:** Conserve and sustainably use the oceans, seas, and marine resources
- 15. Life on Land:** Protect, restore, and promote sustainable use of terrestrial ecosystems, manage forests sustainably, combat desertification, and halt biodiversity loss.

**16. Peace, Justice, and Strong Institutions:** Promote peaceful and inclusive societies, provide access to justice, and build effective, accountable institutions.

**17. Partnerships for the Goals:** Strengthen the means of implementation and revitalize the global partnership for sustainable development.



## POs, and SDG's Covered

### 1. Program Outcomes (POs)covered

PO1	PO2	PO3	PO4	PO5	PO6	PO8	PO9	PO11
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### 2. SDG'S COVERED

1.	No Poverty	
2.	Zero Hunger	
3.	Good Health and Well-being	✓
4.	Quality Education	✓
5.	Gender Equality	
6.	Clean Water and Sanitation	
7.	Clean Energy	
8.	Economic Growth	
9.	Industry, Innovation, Infrastructure	✓
10.	Reduced Inequalities	
11.	Sustainable Cities	✓
12.	Responsible Consumption	
13.	Climate Action	
14.	Life Below Water	
15.	Life on Land	
16.	Peace, Justice, & Strong Institution	
17.	Partnership for the Goal	

## INTRODUCTION:

Artificial Intelligence is an advanced branch of computer science that focuses on creating machines capable of performing tasks that normally require human intelligence such as learning, thinking, and decision making. In the present technological era AI has become the backbone of almost every digital service including smartphones, search engines, medical systems, and online platforms. Students are using AI unknowingly in daily life through Google Assistant, YouTube recommendations, and face recognition. Understanding these technologies at school level helps them to relate science subjects with real applications.

The education system is gradually shifting from memorization to skill-based learning where AI plays a major role. Hence it is necessary to create awareness about AI among rural and semi-urban students. Outreach programs from engineering colleges help to bridge the digital divide.

The workshop was designed to explain AI in very simple language without heavy mathematics. Practical demonstration was included to convert theory into visible experience. The program also encouraged girls to participate in technology fields where their representation is less. Building confidence and curiosity was considered more important than technical perfection. Such initiatives contribute to national development and innovation culture. Therefore the IEEE Student Branch planned this activity as a social responsibility.



## OBJECTIVES OF THE WORKSHOP

The objectives of the Artificial Intelligence workshop were as follows:

1. To introduce high school students to the basic concepts of Artificial Intelligence
2. To create awareness about emerging technologies and their applications
3. To demonstrate how intelligent systems sense, process, and respond to data
4. To relate theoretical concepts with real-world technological solutions
5. To motivate students to develop interest in science, technology, and innovation



## DETAILS OF THE WORKSHOP

The workshop was conducted as an outreach activity by the IEEE Student Branch of SJM Institute of Technology at the Girls' Junior College, Chitradurga. The session was held in a computer laboratory, which provided an interactive learning environment supported by visual presentations and live demonstrations. IEEE student volunteers actively coordinated and delivered the session.

The program was designed to ensure that complex technological concepts were explained in a simplified and engaging manner suitable for high school students. Presentations were supported with real-life examples, illustrations, and hands-on demonstrations to improve comprehension and maintain student interest throughout the session.



## TOPICS COVERED:

The following topics were covered during the workshop:

1. Introduction to Artificial Intelligence
2. Basics of intelligent systems and automation
3. Artificial Intelligence in healthcare
4. Artificial Intelligence in transportation
5. Artificial Intelligence in entertainment
6. Emerging technologies and future trends
7. Role of AI in everyday life

### GLIMPSES OF TOPIC COVERED:



## PRACTICAL DEMONSTRATION OF AI-BASED SYSTEM:

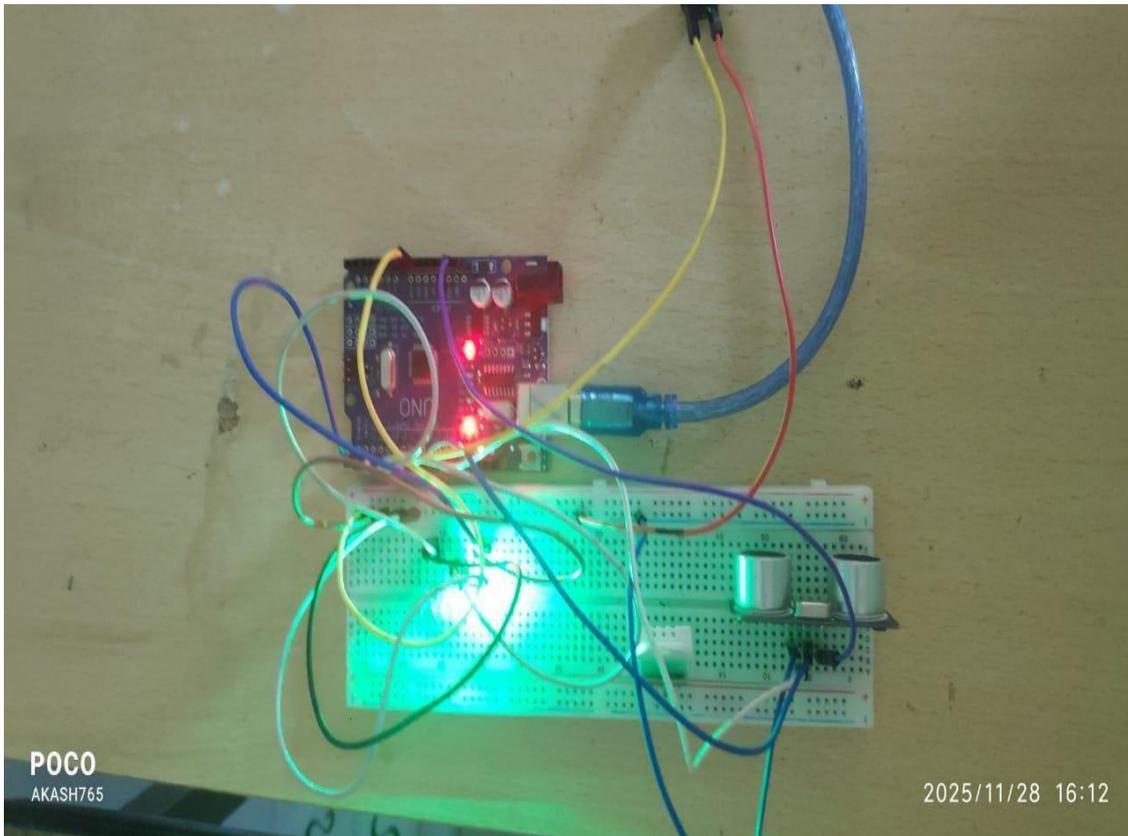
As part of the workshop, a practical demonstration of an Ultrasonic Sensor–Based Obstacle Detection System using Arduino was conducted to help students understand the practical implementation of intelligent and automated systems. The demonstration was intended to provide a clear connection between the theoretical concepts of Artificial Intelligence and their real-world applications.

The system consisted of an Arduino Uno microcontroller interfaced with an ultrasonic sensor and LED indicators. The ultrasonic sensor was used to detect the presence and distance of an object by transmitting ultrasonic waves and receiving the reflected signals. The measured data was processed by the microcontroller, and based on the programmed logic, appropriate output responses were generated through visual indicators. This process demonstrated how machines collect data from their surroundings, analyze it, and take decisions accordingly, which forms the foundation of Artificial Intelligence and smart technologies.

Through this demonstration, students were able to understand the basic working of sensor-based automation systems and their applications in areas such as obstacle avoidance in autonomous vehicles, smart surveillance systems, assistive technologies, and robotics. The demonstration significantly enhanced students' understanding of how Artificial Intelligence concepts are applied in practical scenarios.



## GLIMPSES OF PRACTICAL DEMONSTRATION:



## STUDENT INTERACTION AND PARTICIPATION:

The students actively participated throughout the workshop and showed keen interest in the topics discussed. They were attentive during the presentations and engaged enthusiastically during the demonstration session. Several students asked questions related to Artificial Intelligence, automation, and future technological applications. The interactive nature of the workshop encouraged curiosity and promoted a positive learning atmosphere.



Furthermore, the hands-on activities facilitated a collaborative environment where students worked in small groups to solve complex problems. This teamwork allowed them to exchange diverse perspectives and brainstorm creative solutions to the challenges presented. Many participants demonstrated a high level of critical thinking by analyzing the ethical implications of AI in modern society.

The session concluded with a vibrant Q&A segment, during which students sought advice on career pathways and the necessary skill sets for the evolving job market. Their proactive engagement not only enriched the learning experience but also provided valuable feedback for future workshops. The enthusiasm shown by the cohort indicates a strong foundation for continued exploration into advanced technological fields. This level of involvement was instrumental in achieving the primary learning objectives of the program.

## OUTCOMES OF THE WORKSHOP:

The workshop successfully achieved the following outcomes:

1. Improved awareness about Artificial Intelligence among high school students
2. Better understanding of how intelligent systems work in real-life applications
3. Increased interest in technology and innovation
4. Motivation for students to explore future opportunities in science and engineering



The collaborative nature of the group exercises also enhanced their communication and problem-solving capabilities, which are essential in any scientific discipline. Furthermore, the exposure to real-world case studies helped demystify complex algorithms, making the subject matter more accessible and less intimidating. Overall, the program successfully instilled a sense of confidence in the students, empowering them to become active contributors to the future of technology rather than just passive consumers.



## CONCLUSION:

The outreach workshop on Artificial Intelligence and Other Emerging Technologies conducted at the Girls' Junior College, Chitradurga, was a successful and informative initiative. The workshop effectively introduced students to the fundamentals of Artificial Intelligence and demonstrated its relevance in modern society through practical examples. The inclusion of a hands-on hardware demonstration enhanced student understanding and engagement. Such outreach activities play a vital role in nurturing technological awareness and inspiring young minds toward future-oriented learning.

## ACKNOWLEDGEMENT:

The organizers express their sincere gratitude to the IEEE Student Branch, SJM Institute of Technology, the management and faculty of the Girls' Junior College, Chitradurga, and all IEEE student volunteers for their valuable support and cooperation in making this outreach workshop a success.



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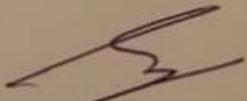


**Event on "Artificial Intelligence Workshop"**

Attendance Report :

Date:28-11-2025

Sl.no	Name of the Student	Signature
01	Keerthana M L	Keerthana
02	Chandana H	Chandana H
03	Shreya H E	Shreya H.E
04	Ajith Ningappa Jayagond	Ajith Ningappa Jayagond
05	Priyanka N	Priyanka N
06	Minal R S Gowda	Minal R S Gowda
07	Chandana M	Chandana M
08	Anusha B A	Anusha B A
09	Varshitha S	Varshitha S
10	Sai Kiran P	Sai Kiran P
11	Likhitha P	Likhitha P
12	Kesar Malon C	Kesar Malon C
13	B B Hajira	B B Hajira
14	Aishwarya G	Aishwarya G
15	Akash G	Akash G
16	Rakshitha J H	Rakshitha J H
17	Abhigna	Abhigna
18	Tanuja.T(Graduate member)	Tanuja.T
19	Sushmitha Deb(Graduate member)	SUSHMITHA D.

  
HOD Signature

Head of the Dept.  
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