



Embedded AI Design and AIoT

Session name: Embedded AI Design and AIoT

Date: 16 to 21 Dec 2024

Mode of session: Offline

Number of attendees: 20

Speakers: Mrinalini Barik - DigiToad Technologies Pvt. Ltd.

The IEEE Communication Society of **IEEE RSCOE Student Branch**, in collaboration with the **Digitoad Technologies** and **IEEE Pune Section**, organized an insightful discussion on **Embedded AI Design and AIoT**. The event brought together industry experts, **Mrinalini Barik, Senior Application Engineer at DigiToad Technologies** along with enthusiasts to explore the latest trends, innovations, and future possibilities in Embedded AI Design and AIoT.

The workshop on Embedded AI Design and AIoT conducted by Digitoad Technologies was an enlightening experience. The Internet of Things(IoT) and embedded systems are interconnected technologies that are revolutionizing the way we live and work. IoT refers to a network of physical devices embedded with sensors, software, and connectivity, enabling them to collect and exchange data. Embedded systems, on the other hand, are specialized¹ computer systems designed to perform dedicated functions within larger systems. Together they form the backbone of modern smart technologies and driving innovation across various industries.

It offered a hands-on introduction to working with the STM32 microcontroller and creating machine learning models based on its responses. We gained a solid understanding of IoT and learned how to design embedded systems integrating electronics. The workshop included engaging projects like developing an air quality sensor, a motion sensor, and experiments demonstrating airplane motion (pitch, roll, and yaw). The faculty was highly supportive, guiding us through every step of the process.

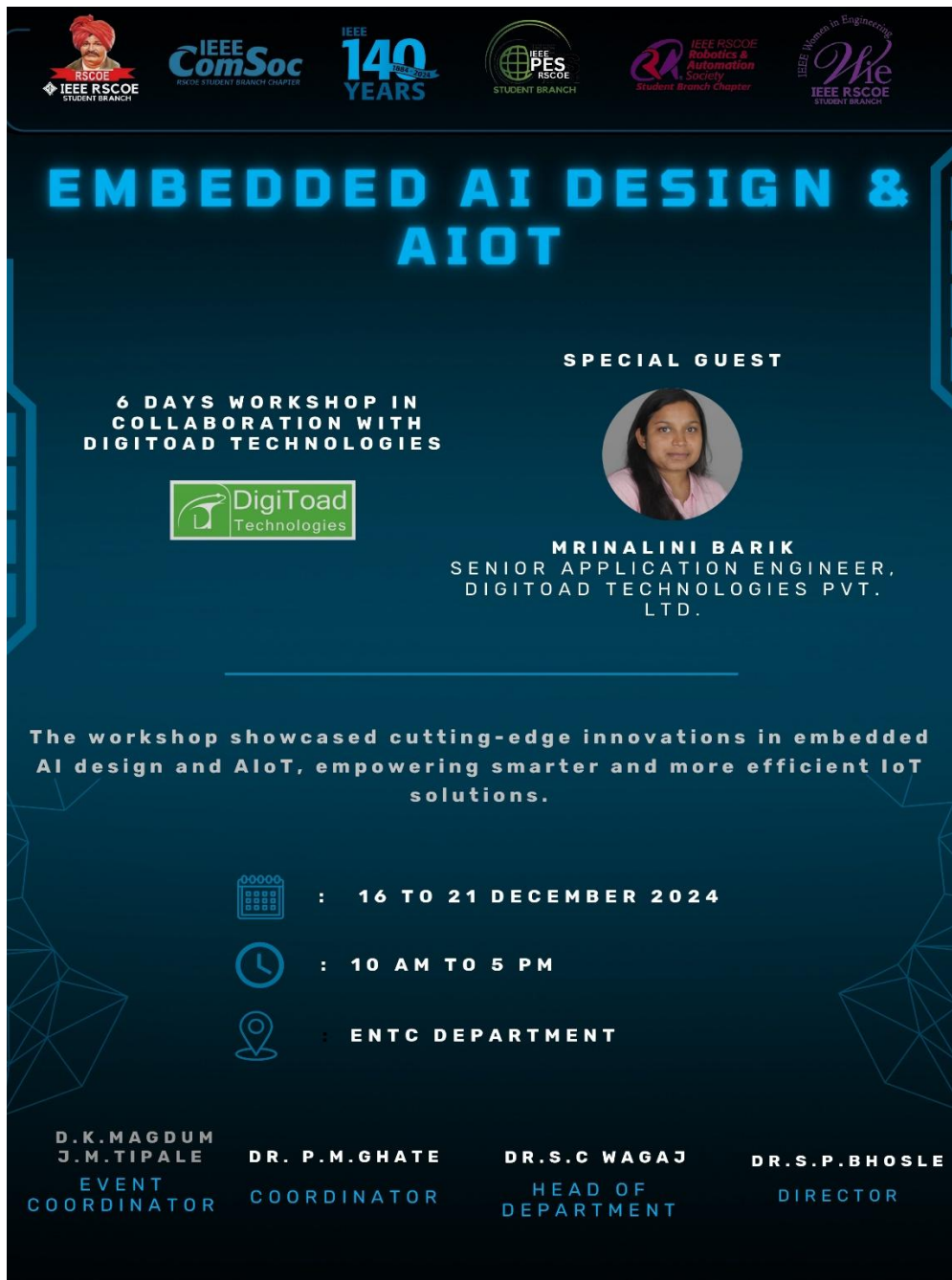
Edge AI is a cutting-edge technology that brings artificial intelligence (AI) algorithms to the edge of the network, closer to where data is generated. This approach enables data processing and analysis to occur directly on devices like smartphones, IoT sensors, and embedded systems, rather than relying on centralized cloud servers.

The MPU-6050 is a popular and versatile 6-axis motion tracking device. It combines a 3-axis gyroscope and a 3-axis accelerometer on a single chip, making it a compact and cost-effective solution for various applications. . This allows it to measure both linear acceleration and angular rotation, providing a comprehensive understanding of an object's motion in 3D space.

The workshop illuminated the vast potential of Embedded AI and IoT to revolutionize industries, enabling smarter, more efficient, and connected solutions. Engaging discussions with industry experts and like-minded peers enhanced my understanding of cutting-edge AIoT technologies, from edge computing to sensor integration and real-time decision-making.

It was inspiring to explore real-world applications, collaborate on impactful ideas, and witness how these innovations are shaping the future of technology. A heartfelt thanks to the organizers and mentors for their guidance and support. I'm eager to apply these insights to tackle modern challenges and contribute meaningfully to the ever-evolving landscape of Embedded AI and IoT.

Event Flyer:



The flyer is a vertical rectangular poster with a dark blue background and light blue geometric patterns on the sides. At the top, there is a row of logos: IEEE RSCOE Student Branch, IEEE ComSoc, IEEE 140 Years, IEEE PES RSCOE Student Branch, IEEE RSCOE Robotics & Automation Society Student Branch Chapter, and IEEE Women in Engineering. The main title "EMBEDDED AI DESIGN & AIOT" is in large, bold, light blue capital letters. Below the title, on the left, it says "6 DAYS WORKSHOP IN COLLABORATION WITH DIGITOAD TECHNOLOGIES" with the DigiToad Technologies logo. On the right, it says "SPECIAL GUEST" above a circular portrait of Mrinalini Barik, followed by her name and title: "MRINALINI BARIK, SENIOR APPLICATION ENGINEER, DIGITOAD TECHNOLOGIES PVT. LTD.". A horizontal line separates this from the next section, which says "The workshop showcased cutting-edge innovations in embedded AI design and AIoT, empowering smarter and more efficient IoT solutions." Below this, there are three rows of event details, each with an icon and text: a calendar icon for "16 TO 21 DECEMBER 2024", a clock icon for "10 AM TO 5 PM", and a location pin icon for "ENTC DEPARTMENT". At the bottom, there are four columns of names and titles: D.K. MAGDUM and J.M. TIPALE (Event Coordinator), DR. P.M. GHATE (Coordinator), DR. S.C. WAGAJ (Head of Department), and DR. S.P. BHOSLE (Director).

EMBEDDED AI DESIGN & AIOT

SPECIAL GUEST

6 DAYS WORKSHOP IN COLLABORATION WITH DIGITOAD TECHNOLOGIES

MRINALINI BARIK
SENIOR APPLICATION ENGINEER,
DIGITOAD TECHNOLOGIES PVT. LTD.

The workshop showcased cutting-edge innovations in embedded AI design and AIoT, empowering smarter and more efficient IoT solutions.

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ENTC DEPARTMENT

D.K. MAGDUM
EVENT COORDINATOR

DR. P.M. GHATE
COORDINATOR

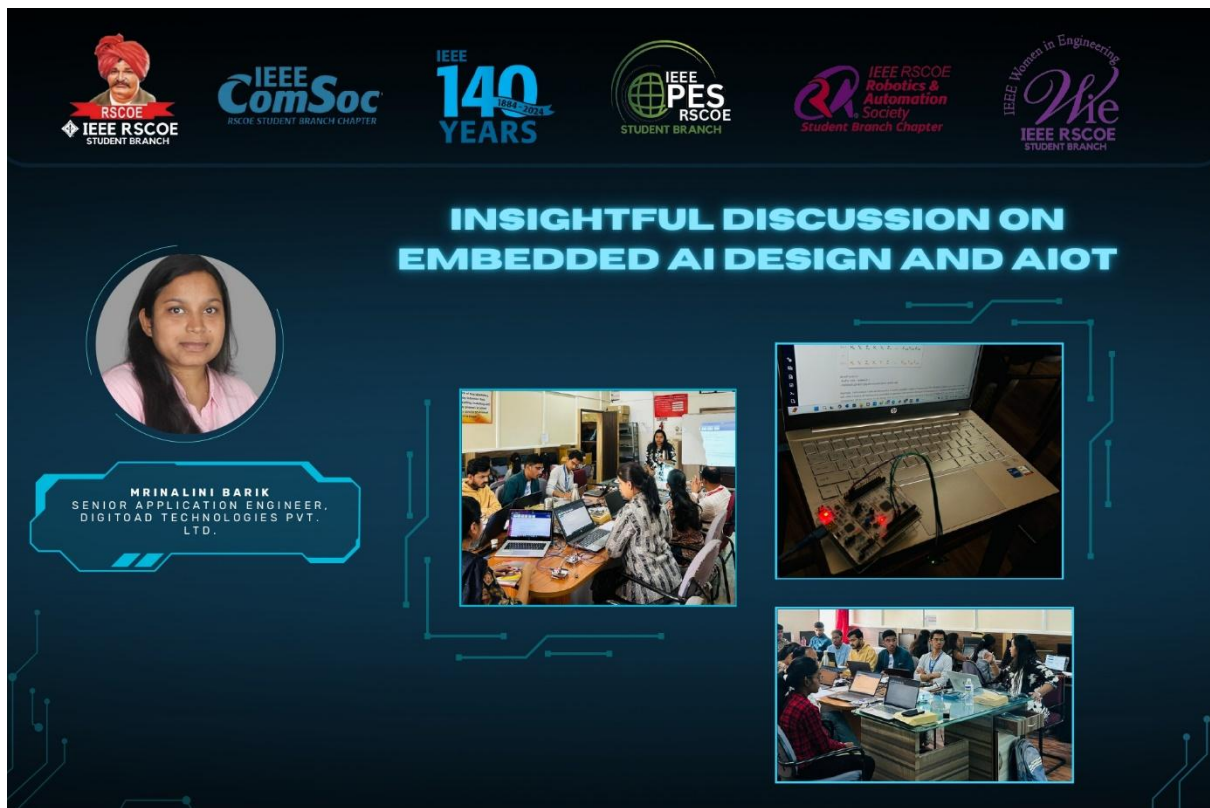
DR. S.C. WAGAJ
HEAD OF DEPARTMENT

DR. S.P. BHOSLE
DIRECTOR

Here are few Glimpses of the event:



After Event Publicity:



Token of Appreciation presented to the Guest Speakers:

