Special Session- 4 (SS-4)

Title of the Proposal: Applications of AI, ML, VLSI, Signal Processing, Embedded Systems, Control Systems, Assistive Devices in Power, Energy, Transportation, and Electric Vehicles

Technical Outline of the Session:

Artificial intelligence (AI) and machine learning (ML) have many applications in a variety of industries, including:

VLSI Design

- Design Automation: AI-powered design automation tools can optimize digital circuit designs for area, power, and performance.
- Physical Design: ML algorithms can be used to optimize physical design, including placement, routing, and timing closure.
- Fault Detection and Diagnosis: AI-powered systems can quickly identify and diagnose faults in VLSI designs, reducing debug time and costs.

Signal Processing

- Image and Video Processing: AI-powered image and video processing techniques can be used for object detection, tracking, and recognition.
- Speech Recognition: ML algorithms can be used to develop speech recognition systems that can accurately recognize spoken words and phrases.
- Signal Compression: AI-powered signal compression techniques can be used to reduce the size of signals while maintaining their quality.

Embedded Systems

- Real-Time Systems: AI-powered real-time systems can be used to develop intelligent embedded systems that can respond to changing conditions in real-time.
- IoT Devices: ML algorithms can be used to develop intelligent IoT devices that can learn from data and make decisions autonomously.
- Autonomous Vehicles: AI-powered autonomous vehicles can use ML algorithms to detect and respond to objects in their environment.

Assistive Devices

Assistive devices are technologies that help people with disabilities perform daily tasks, such as hearing, seeing, communicating, moving, and more. Assistive devices can range from low-tech to high-tech solutions. Most people who use assistive technology use more than one product.

Topics of Session (maximum 5):

i. VLSI Design for Electric Vehicle
ii. Image, Audio and Video Processing Techniques for Electric Vehicles
iii. Geophysical / Radar / Sonar/ Optical/ Smart Sensor Signal Processing for Electric Vehicles
iv. Embedded System for Defence, Healthcare, Agriculture
v. Embedded System for Assistive Devices

Organizers:

Dr. Jami Venkata Suman, GMR Institute of Technology GMR Nagar, Andhra Pradesh, India (venkatasuman.j@gmrit.edu.in)

Dr. B. Pragathi, Associate Professor, College of Technology, Vijayawada, Andhra Pradesh, India (drbpragathi@mictech.ac.in)