



IEEE 7th Global Power, Energy and Communication Conference

Bochum/GERMANY

June 11-13, 2025

Special Session on

Real-Time AI Processing in Resource-Constrained Embedded Devices

The rapid advancement of Artificial Intelligence (AI) has opened new frontiers in embedded systems, enabling intelligent decision-making at the edge. However, deploying AI in resource-constrained embedded devices poses significant challenges, including limited computational power, memory, and energy resources. This special session focuses on the latest research, innovations, and practical solutions for real-time AI processing in such environments. Topics of interest include efficient model optimization, lightweight AI frameworks, hardware-software co-design, and applications in areas like IoT, healthcare, autonomous systems, and industrial automation. The session aims to bring together researchers and industry experts to discuss cutting-edge techniques, share insights, and explore future directions for enabling real-time AI on low-power, resource-constrained embedded devices.

Topics of interest include, but are not limited to:

- Low-Power Embedded Devices.
- Machine Learning on Microcontrollers and Ultra-Low-Power Devices.
- Resource-Constrained Devices.
- Fusion in Embedded Systems.
- AI Algorithms for Battery-Powered Embedded Devices.
- Embedded Systems Using AI.
- AI-Driven Real-Time Control Systems for Robotics and Drones.
- Real-Time AI on Embedded Devices.
- Real-Time AI for Wearable Health Monitoring Devices.
- AI in Signal Processing for Communication Systems.
- Lightweight AI Frameworks for Embedded Systems.
- Real-Time AI for Predictive Maintenance in Industrial IoT.
- AI in Vision Systems for Autonomous Drones and Vehicles.
- Hardware-Software Co-Design for Real-Time AI on Embedded Platforms.
- Smart Agriculture and Environmental Monitoring.
- Embedded Systems for Augmented Reality (AR) Applications.
- Benchmarking and Performance Evaluation of Real-Time AI on Embedded Devices.

Organizer(s):

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Deadlines of the special session:

Full paper submission (maximum 6 pages):	March 30, 2025
Notification of acceptance:	April 27, 2025
Final submissions due:	May 11, 2025

All the instructions for paper submission are included at the conference website.
<https://gpecom.org/2025/guidelines/>