

CALL FOR PAPERS

IEEE Journal of Selected Areas in Sensors Special Section on

**Edge Intelligence in the Era of Large AI
Models: Toward Efficient and
Sustainable IoT Sensor Systems****Justification and Scope:**

Recent advances in large-scale AI models—such as transformer-based architectures, convolutional neural networks (CNNs), and deep reinforcement learning—have significantly expanded the capabilities of IoT and sensor-driven systems. However, deploying these powerful AI models in edge computing environments poses critical challenges, including constrained resources, data prioritization, energy efficiency, and sustainability. This Special Section invites original research articles, tutorials, and review papers focused on innovative approaches for integrating large-scale AI models within sensor networks and IoT infrastructures, particularly emphasizing practical real-world applications and sustainable solutions.

Topics of Interest (include, but are not limited to):

- Edge computing architectures for large-scale AI integration with IoT sensors
- Real-time processing and prioritization of sensor data (Value of Information)
- Energy-efficient AI deployments in sensor-driven edge systems
- Privacy-preserving techniques and ethical considerations for sensor data handling
- UAV-enabled sensor networks for environmental and disaster monitoring
- Smart agriculture systems utilizing sensor-AI integration
- Healthcare sensor applications prioritizing privacy, security, and sustainability
- Industrial IoT and autonomous systems (connected vehicles, intelligent transportation systems)
- Sustainable frameworks and energy management strategies in sensor networks
- Ethical implications and societal impact of large-scale AI in sensor-driven applications

Important Dates:

- Call for Papers Announcement: August 1, 2025
- Extended Manuscript Submission Deadline: May 31, 2026
- Notification of Acceptance: November 1, 2026
- Final Manuscript published in IEEE Xplore: April 2027
- Tentative date of paper section: May 2027

Guest Editors:

- Lead GE: Xun Shao, Toyohashi University of Technology, Japan, x-shao@ieee.org
- GE1 Reza Malekian, Malmö University, Sweden, reza.malekian@ieee.org
- GE2 Kui Wu, University of Victoria, Canada, wkui@uvic.ca
- GE3 Binbin Zhou, Hangzhou City University, China, bbzhou@hzcu.edu.cn
- GE4 Lei Zhong, Toyota Motor Corporation, Japan, lei_zhong@mail.toyota.co.jp