

CALL FOR PAPERS**IEEE Journal of Selected Areas in Sensors Special Section on
Hardware Accelerators towards
At-Edge Computing for Sensors**

With the rapid development of artificial intelligence, the Internet of Things (IoT), and real-time analytics, sensor technology is advancing towards greater autonomy and intelligence. Modern applications in healthcare, smart cities, industrial automation, and environmental monitoring require sensors to process data efficiently at the edge, reducing latency, power consumption, and reliance on cloud computing. Hardware accelerators have emerged as key enablers of this paradigm shift, providing high-performance, low-power solutions for at-edge computing. However, the increasing complexity of sensor networks and the demand for real-time processing present significant challenges, including energy efficiency, security, and heterogeneous computing integration.

This special section aims to explore innovations in hardware accelerators designed to enhance sensor-based edge computing. Topics of interest include

- FPGA/ASIC implementations for real-time sensor processing
- Neuromorphic and in-memory computing for edge applications
- Low-power, high-performance AI/ML accelerators for sensors
- Real-time signal processing for biomedical and industrial sensors
- Secure, energy-efficient accelerators for IoT and embedded systems
- Hardware-software co-design for edge sensor networks
- Diverse computing frameworks with CPUs, GPUs, and accelerators

This special section is expected to contain **at least 10-15 articles**, covering a broad range of topics related to hardware accelerators for edge computing. Original research contributions, tutorials, and review papers are invited to address these challenges and propose novel solutions for efficient, intelligent, and reliable sensor data processing at the edge. **Papers exploring both theoretical advancements and practical hardware implementations, with an emphasis on low-latency, low-power solutions for real-time edge computing, are particularly encouraged.**

Solicited and invited papers shall undergo the standard IEEE Journal of Selected Areas in Sensors (JSAS) peer review process. All manuscripts must be submitted online via the IEEE Author Portal, see <https://ieee.atyponrex.com/journal/jsas>. When submitting, please indicate in the “Manuscript Type” roll-down menu that the paper is intended for the **“Hardware Accelerators towards At-Edge Computing for Sensors”** Special Section. Authors are particularly encouraged to suggest names of potential reviewers for their manuscripts in the space provided for these recommendations in Manuscript Central.

For manuscript preparation and submission, please follow the guidelines in the Information for Authors at the IEEE Journal of Selected Areas in Sensors web page, <https://ieee-jsas.org/>

Important dates

- Manuscript Submission: October 15th, 2025
- Completion of First-Round Review: November 30th, 2025
- Deadline for Revision Submission: December 31st, 2025
- Notification of Acceptance: January 31st, 2025
- Publication: March 2026

Guest Editors:

- Prof. Dr. Bhaskar Choubey, University of Siegen, Germany (email: bhaskar.choubey@uni-siegen.de), conducting research on image sensors and Memristors. Currently an Associate Editor of IEEE Sensors Journal.
- Prof. Alex James, Digital University of Kerala, India (email: a.james@duk.ac.in), conducting research on chip accelerators for AI. Currently the Associate Editor of IEEE Access, IEEE Transaction on Biomedical Circuits and System and IEEE Transactions on Circuits and System for Artificial Intelligence.
- Dr. Jingling Liu, Associate Professor, Sun Yat-sen University, Shenzhen, China, email: (liuji77@mail.sysu.edu.cn), conducting research on millimeter scale sensor system for IoT and biomedical applications, energy harvester, and low power subthreshold circuit design.
- Dr. Duc Huy Nguyen, Research Assistant Professor, National Yang Ming Chiao Tung University, Hsinchu, Taiwan (email: ndhuyvn1994@nycu.edu.tw), conducting research on hardware accelerators for AI and deep learning in real-time biomedical signal processing.