

CALL FOR PAPERS

IEEE Journal of Selected Areas in Sensors Special Section on

Wireless Sensing AI and Technologies

Wireless sensing using RF signals such as Wi-Fi, mmWave, UWB, RFID, etc., has turned various devices and systems from a pure communication platform to a ubiquitous sensing infrastructure, achieved remarkable advances in both academia and industry, and been revolutionizing many fields such as healthcare, home/robot automation, elderly care, smart cars with numerous innovative applications such as presence detection, vital sign monitoring, sleep monitoring, fall detection, just to name a few. In the broad context of machine perception, wireless sensing technologies extend conventional modalities beyond the visible spectrum (color or infrared images) to the RF spectrum, enabling a new Wireless AI Perception that works in absolute darkness, through occlusions, and with privacy protection.

While a range of theories, models, methods, and applications have been proposed and developed to achieve these technological advances, many conventional techniques do not directly apply and need to be upgraded. For instance, channel parameter estimation of Doppler Speed, Time-of-Flight, Angle-of-Arrival, etc. becomes more difficult especially on commodity WiFi and compact radar devices. As wireless sensing with machine/deep learning has attracted numerous research interests and demonstrated impressive effectiveness, how to extract features that are robust to environmental changes and design network models with consistent performance without retraining in new environments still remains challenging.

This special section aims to address these challenges, fostering advances in wireless sensing research, innovation, and applications. It is intended that this Special Section of IEEE Journal of Selected Areas in Sensors (JSAS) will show the state-of-the-art in wireless sensing. Original research contributions, tutorials and review papers are sought in related areas of wireless sensing, including but not limited to:

- Theory, method, modeling
- Signal processing techniques
- Machine learning and AI
- Deep learning techniques and applications
- Sensing data fusion
- Edge and cloud computing
- Integrated sensing and communication systems
- Localization and tracking
- Security and privacy
- Emerging applications in smart spaces, mobile health, biomedical applications

Submission Guidelines

Solicited and invited papers shall undergo the standard IEEE Journal of Selected Areas in Sensors (JSAS) peer review process. All manuscripts must be submitted on-line, via the IEEE Author Portal, see <https://iee.atyponrex.com/journal/jsas>. When submitting, please indicate in the “Manuscript Type” roll down menu that the paper is intended for the “Wireless Sensing AI and Technologies” 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 IEEE Journal of Selected Areas in Sensors web page, <https://ieee-jsas.org/>.

Important Dates

· Manuscript Submission:	July 15, 2025
· Completion of First-Round Review:	August 30, 2025
· Deadline for Revision Submission:	September 30, 2025
· Notification of Acceptance:	October 30, 2025
· Publication:	November 2025

Guest Editors:

- Beibei Wang, VP Research, Origin Research, USA (beibei.wang@originwirelessai.com)
- Chenshu Wu, Assistant Professor, Department of Computer Science, The University of Hong Kong, Hong Kong, China (chenshu@cs.hku.hk)
- Yasamin Mostofi, Professor, Department of Electrical and Computer Engineering, University of California, Santa Barbara, USA (ymostofi@ece.ucsb.edu)
- Sofie Pollin, Professor, Faculty of Engineering Science/Electrical Engineering Department, KU Leuven, Belgium (sofie.pollin@kuleuven.be)
- Wen Hu, Professor, School of Computer Science and Engineering, The University of New South Wales, Australia (wen.hu@unsw.edu.au)