

Special Issue

Simultaneous Localization and Mapping (SLAM) and Artificial Intelligence (AI) Based Localization for Positioning Applications and Mobile Robot Navigation—Second Edition

Message from the Guest Editors

With the proliferation of 5G technologies and the Internet of Things (IoT), there has been a surge of mobile robot technologies and location-based services entering our daily lives. This trend accelerated during the COVID-19 pandemic, amplifying the need for automated solutions, which require knowledge of the sensor/robot location and perception of the dynamic environment, e.g., robots/drones in indoor and outdoor environments for delivery, surveillance, inspection, or mapping applications. Simultaneous Localization and Mapping (SLAM) and Artificial Intelligence (AI) are seen as key enablers for precise localization and mobile robot navigation. Despite the popularity of these methods, it remains a challenge for them to work robustly in dynamic, poorly lit, or unknown environments with possible multipath effects. Hence, data from computer vision, inertial, LiDAR, and other time-of-flight sensors are typically coupled with the latest AI and Machine Learning techniques to meet the challenging requirements of high precision in location accuracy, especially in dynamic indoor environments.

Guest Editors

Dr. Henrik Hesse

James Watt School of Engineering, University of Glasgow, Glasgow G12 8QQ, UK

Dr. Chee Kiat Seow

School of Computing Science, University of Glasgow, Glasgow G12 8RZ, UK

Deadline for manuscript submissions

closed (30 October 2025)



Sensors

an Open Access Journal
by MDPI

Impact Factor 3.5
CiteScore 8.2
Indexed in PubMed



mdpi.com/si/189987

Sensors
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
sensors@mdpi.com

[mdpi.com/journal/
sensors](https://mdpi.com/journal/sensors)





Sensors

an Open Access Journal
by MDPI

Impact Factor 3.5
CiteScore 8.2
Indexed in PubMed



[mdpi.com/journal/
sensors](https://mdpi.com/journal/sensors)



About the Journal

Message from the Editor-in-Chief

Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. *Sensors* organizes Special Issues devoted to specific sensing areas and applications each year.

Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro
Department of Electrical and Information Engineering, Politecnico di Bari, Via Orabona 4, 70126 Bari, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, MEDLINE, PMC, Ei Compendex, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Instruments and Instrumentation) / CiteScore - Q1 (Instrumentation)