

Special Issue

Advanced Sensing for Intelligent Robot Localization and Navigation

Message from the Guest Editors

The core challenge of intelligent robots is accurate localization and navigation, which heavily rely on advanced sensing technologies. With the rapid progress in sensing hardware and algorithms, robots can now leverage diverse modalities such as LiDAR, vision, inertial sensors, GNSS, radar, and even Wi-Fi signals to achieve robust perception and precise localization. This Special Issue aims to explore innovative sensing technologies and their applications in intelligent robot navigation and positioning. Potential topics including, but not limited to, the following:

- Multi-sensor fusion for robot localization and navigation;
- Advanced LiDAR, vision, radar, and inertial sensing technologies;
- 3D dense mapping, semantic mapping, and scene graph mapping for dynamic environment navigation and localization;
- Learning-based methods for perception, navigation, and localization;
- Robust navigation in GPS-denied or challenging environments;
- Collaborative perception and localization for multi-robot systems;
- Applications in autonomous vehicles, drones, service robots, and planetary rovers

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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.

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