Special Issue

SLAM and Multi-Sensor Fusion for Robotics, Low-Altitude Remote Sensing, and 3D Applications

Message from the Guest Editor

Simultaneous Localization and Mapping (SLAM) has become a key technology in robotics, autonomous systems, and remote sensing. With the rapid development of low-altitude platforms such as UAVs, backpack and helmet systems, and compact robotic platforms, there is an increasing demand for robust SLAM and multi-sensor fusion approaches that enable accurate 3D perception in both structured and unstructured environments.

This Special Issue seeks to collect contributions that explore novel methods, system integration, and real-world applications of SLAM in robotics and low-altitude remote sensing. Emphasis will be placed on advancing theories and techniques that support autonomous navigation, environmental monitoring, and 3D mapping across diverse scenarios, from urban and indoor spaces to forestry and underground environments.

Suggested themes include (but are not limited to) the following:

SLAM algorithms with LiDAR, vision, radar, GNSS, and IMU;
Multi-sensor calibration, synchronization, and fusion;
Low-altitude remote sensing and UAV-based 3D mapping;
Wearable/mobile mapping systems and field applications;
Benchmark datasets and evaluation for large-scale SLAM.

Guest Editor

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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