Special Issue

Multimodal Sensing, Fusion, and VLMs for Scene Understanding and Robot Vision

Message from the Guest Editors

This Special Issue explicitly welcomes work that centers on sensors and their applications, including the following: (i) sensor design/selection (RGB, depth, thermal, event, LiDAR, radar, IMU, microphones), placement, and synchronization; (ii) data acquisition pipelines (ground-truthing, calibration, time/pose alignment, distortion compensation, uncertainty/quality assessment); (iii) fusion architectures that are sensor-aware (modality reliability weighting, failure detection, cross-modal registration); and (iv) deployment on real systems (embedded/edge platforms, power/latency tradeoffs, safety). We encourage submissions that report new datasets and benchmarks built from real sensor suites, application-driven case studies (e.g., mobile/industrial robots, assistive and field robotics), and evaluation protocols that quantify calibration, robustness under domain shift, and reliability in-the-wild. Our goal is to advance scalable, safe, and explainable robot vision by tightly coupling sensing, fusion, and VLM-driven perception in practical environments.

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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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