Special Issue

AI for Sensor-Based Robotic Object Perception

Message from the Guest Editors

This Special Issue focuses on AI-driven solutions for sensor-based robotic perception tasks, such as object classification, object detection, semantic segmentation, robot navigation, SLAM, and many others. The topics of interest include (but are not limited to) the following areas:

- AI models for multi-sensor data fusion (e.g., vision, audio, touch, and LiDAR);
- Deep learning architectures optimized for real-time sensor processing;
- Few-/zero-shot learning for sensor-based perception;
- Embodied AI for sensor-driven robotic interaction;
- Federated learning for collaborative sensor data analysis;
- Meta-learning to enable rapid adaptation to new sensor inputs;
- Self-supervised learning from unlabeled sensor data;
- Domain adaptation for robust perception across varying sensor conditions;
- Semi-supervised and unsupervised learning for sensor data interpretation;
- Lifelong/continual learning to refine sensor-based perception over time.

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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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