Special Issue

Advanced Sensors for Intelligent Robotic Systems: Vision, Touch, and Dexterous Manipulation

Message from the Guest Editors

The rapid development of sensors is revolutionizing embodied intelligence in robotics. In addition, recent breakthroughs in the AI-driven multimodal fusion of advanced sensors are overcoming longstanding challenges in adaptive grasping, deformable object manipulation, and real-time interaction with dynamic environments.

This Special Issue seeks research investigating transformative sensing technologies that bridge the perception–action gap, with emphasis on vision–touch co-design frameworks and their applications in closed-loop manipulation. We welcome contributions spanning from fundamental sensor innovations to applications in medical robotics, industrial automation, and collaborative robots.

- Tactile sensing technologies and applications;
- Advanced sensor design and perception methods;
- Sensor fusion for tactile and visual feedback;
- Tactile sensors in dexterous manipulation;
- Advances in perception and control technologies for robotic systems;
- AI and LLM in sensor fusion;
- Multi-modal sensor fusion for grasping and manipulation.

Guest Editors

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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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