Special Issue

Sensing, Modeling and Learning for Robotic Manipulation

Message from the Guest Editor

The development and modeling of sensors across various modalities (e.g., visual, tactile, audio) have been essential for many robotic manipulation systems, enabling applications in critical domains such as industrial automation, elderly care, surgical operations, and space exploration. This Special Issue focuses on the development of novel sensor technologies, their modeling, and their integration with learning systems for robotic applications. Sensory modalities such as vision, touch, sound, and proprioception are vital for physical interaction. For example, chopping a carrot relies not only on visual cues but also on the sound of the knife hitting the cutting board and the tactile feedback upon contact. Integrating multiple sensory modalities allows for more precise, comprehensive, and effective models of physical interactions. This capability enables robot manipulators to better perceive their environment and perform tasks more efficiently.

- robotic manipulation
- tactile sensors
- vision-based systems
- machine learning
- multi-sensory fusion
- multimodal sensing and perception
- embodied intelligence

Guest Editor

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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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