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 closedloop 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

Dr. Chongkun Xia

Prof. Dr. Xueqian Wang

Dr. Yajing Shen

Deadline for manuscript submissions

31 October 2025



Sensors

an Open Access Journal by MDPI

Impact Factor 3.5 CiteScore 8.2 Indexed in PubMed



mdpi.com/si/235074

Sensors Editorial Office MDPI, Grosspeteranlage 5 4052 Basel, Switzerland Tel: +41 61 683 77 34 sensors@mdpi.com

mdpi.com/journal/

sensors





Sensors

an Open Access Journal by MDPI

Impact Factor 3.5 CiteScore 8.2 Indexed in PubMed



sensors



About the Journal

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.

Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro

Dipartimento di Ingegneria Elettrica e dell'Informazione (Department of Electrical and Information Engineering), Politecnico di Bari, Via Edoardo Orabona n. 4, 70125 Bari, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, MEDLINE, PMC, Ei Compendex, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Instruments and Instrumentation) / CiteScore - Q1 (Instrumentation)