ICIRA 2023 Special Session Proposal

Title of the Proposal: Robotic tactile sensation, perception, and applications

Technical Outline of the Session and Topics:

Outline of the Session: *Tactile perception is an important means for robots to perceive the external environment and interact with it. It is a prerequisite for robots to carry out tasks such as object grasping and recognition, human-robot interaction and collaboration, environmental perception and decision-making. However, the current state of the art still cannot yet meet the intelligent needs of various application scenarios. There is still a huge space waiting to be explored in the fields of hardware, algorithms, system integration, new application scenarios and other areas related to tactile sensing. This session will focus on discussing the current status, core challenges, and future trends of tactile perception and tactile intelligence. Researchers from academia and industry are welcome to share their latest research results or thoughts on related issues.*

Topics of the Session:

- *Novel sensors, devices, and applications*
- *Flexible electronics for robot tactile sensation*
- *Machine learning for robot tactile perception*
- *Vision-based tactile sensing and application*
- *Novel mechanism for tactile measurement*
- *Grasp, manipulation, and cooperation*
- *Physical Human-Robot Interaction (pHRI)*
- *Tactile sensing for industrial and medical applications*
- *Humanoid robot sensation and application*
- *Embodied intelligence for human-robot interaction*

Contact details of the Session Organizers

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