ICIRA 2024 Special Session Proposal

Title of the Proposal: Robot Skill Learning and Transfer

Technical Outline of the Session and Topics:

Outline of the Session: The learning/transfer of robot skills is of great significance for robots to enter human society and is also one of the current research focuses in the field of robotics. At present, common skills learning methods include imitation learning, reinforcement learning, etc. Common skill transfer methods include transfer learning, meta learning, reasoning methods, etc. The emergence of large language models (LLMs) provides new powerful tools for robot skill learning and transfer. Although many achievements have been made in robot skill learning and transfer in recent years, efficient skill learning and transfer for long-sequential operation tasks, fine-grained operation tasks, and dexterous operation tasks still have huge challenges, and need to be investigated.

Topics of the Session:

- *Efficient robot skill learning via imitation learning, reinforcement learning, etc;*
- *Flexible robot skill transfer via transfer learning, meta learning, etc;*
- *Long*-sequential operation skill learning and transfer;
- *Robot skill learning and transfer via LLM;*
- *Multi-modal information-based robot skill learning and robot skill library;*
- *High-fidelity simulation for robot skill learning and transfer;*
- *Humanoid/bionic robot skill learning and transfer;*
- *Whole-body manipulation via skill learning and transfer;*
- *Advanced modeling and control approaches for skill learning and transfer;*
- *Application of robot skill learning and transfer;*
- *Other related topics.*

Contact details of the Session Organizers

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