ICIRA 2024 Special Session Proposal

Title of the Proposal: Technology and application of modular robots

Technical Outline of the Session and Topics:

Outline of the Session: Modular robots are composed of basic units with the same structure and function. With their unique characteristics such as self-reconfiguration, self-assembly, and self-repair, modular robots are continuously expanding their applications in the fields of exploration and rescue, space exploration, and assistive furniture. However, there are still significant opportunities and challenges in the design and manufacturing, perception and communication, reconfiguration planning, and movement evolution of modular robots. This Session focuses on the latest advances in modular robotics technology and typical applications in various scenarios. We welcome researchers in related fields to share their latest research.

Topics of the Session:

- *Design and optimization of modular robots*
- *Distributed perception and communication*
- *Reconfiguration planning*
- *Multi-robot motion control*
- *Multi-agent learning*
- *Robot swarm evolution*

Contact details of the Session Organizers

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