

ARCAI 2024 Special Session “Intelligent perception and control of unmanned systems”

Principal Organizer(s): Quanyong Fan, Weixin Han

1. Quanyong Fan, Northwestern Polytechnical University, fanquanyong@nwpu.edu.cn
2. Weixin Han, Northwestern Polytechnical University, hanweixin2009@163.com

Call for Papers:

Intelligent perception and control of unmanned systems is a rapidly advancing field that combines cutting-edge technology with artificial intelligence to enhance the capabilities of autonomous vehicles and robots. By integrating sophisticated sensors and AI algorithms, unmanned systems can perceive their environment with precision and make intelligent decisions in real-time. The intelligent perception aspect involves equipping unmanned systems with sensors such as cameras, lidar, and radar to gather information about their surroundings. These sensors enable the systems to detect obstacles, navigate through complex environments, and interact with objects in a strategic manner. On the other hand, intelligent control refers to the ability of unmanned systems to autonomously execute tasks based on the information gathered through perception. Through advanced algorithms and machine learning techniques, these systems can adapt to changing conditions, optimize their actions, and ensure efficient and safe operation. Overall, the integration of intelligent perception and control in unmanned systems is revolutionizing industries such as transportation, agriculture, and surveillance, paving the way for a future where autonomous technologies play a crucial role in various applications.

The principal topics planned to be covered are as follows, but are not limited to:

- Advanced Sensors for Intelligent Perception
- Artificial Intelligence Algorithms for Autonomous Control
- Sensor Fusion Techniques in Unmanned Systems
- Integration of Perception and Control in Unmanned Systems
- Applications of Intelligent Unmanned Systems in Agriculture
- Ethical Considerations in the Development of Autonomous Technologies
- Safety Measures for Autonomous Vehicles and Robots
- Future Trends and Innovations in Intelligent Perception and Control

Accepted and presented papers will be submitted for inclusion into IEEE Xplore subject to meeting IEEE Xplore’s scope and quality requirements and indexed by EI Compendex and Scopus. Selected papers will be invited to SCI Journal Special Issues.