



ICONIP 2023

November 20-23, 2023, Changsha, China

Invited Session Proposal for ICONIP2023

Title: Intelligent Control and Decision-making of Unmanned Systems

Description: Unmanned systems have become increasingly important in recent years, with applications ranging from military operations to environmental monitoring. However, there are still pressing issues that need to be addressed in the application of unmanned systems technology. Intelligent control and decision-making technologies for unmanned systems refer to the use of various technical means such as computer, communication, control, perception, and artificial intelligence to enable unmanned systems to possess capabilities of autonomous sensing, decision-making, and execution. By optimizing aspects such as perception, learning, reasoning, and decision-making, intelligent control and decision-making technologies can enable unmanned systems to adaptively adjust themselves and adapt to external environments, playing a crucial role in facilitating the true intelligence of unmanned systems.

This invited session aims to explore the forefront of research in applying intelligent control and decision-making technologies to unmanned systems, such as unmanned aerial vehicles (UAVs), autonomous underwater vehicles (AUVs), unmanned ground vehicles (UGVs), unmanned surface vehicles (USVs), unmanned space systems and robots. The session will cover topics including optimal control, adaptive control, robust control, reinforcement learning, policy iteration, value iteration, off-policy learning, adaptive dynamic programming, image processing and deep learning. Moreover, the integration of these techniques into unmanned systems and their performance evaluation in real-world applications are also very popular research direction. I. By bringing together researchers and practitioners in this rapidly evolving field, this session provides a valuable opportunity to discuss the challenges and opportunities of achieving intelligent control and decision-making for unmanned systems using state-of-the-art reinforcement learning techniques.

Topics include (but are not restricted to):

- Neural Network
- Intelligent Control
- Intelligent Decision-making
- Unmanned systems
- Reinforcement learning

■ Deep learning

Proposers:

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