Special Issue

Collaborative UAVs Intelligent Decision Optimization

Message from the Guest Editor

Cooperative control of multi-UAV systems is an active area of research. UAV swarms and fleets have demonstrated complex coordinated behaviors and mobility. However, challenges remain in tasks such as precision formation control, real-time motion planning with collision avoidance, and dynamic reconfiguration. Key issues also include the optimal allocation of limited resources such as sensing, communication, and computation across the UAV network.

This Special Issue seeks original contributions that include but are not limited to: Distributed optimization algorithms for multi-agent collaborative decision making and cooperative control; Reinforcement learning-based collaborative decision optimization and cooperative control methods; Hybrid model-based optimization and learning frameworks for decision making and cooperative control; Novel system architectures for collaborative UAV decision making and cooperative control (e.g., leader-follower, behavior composition); Applications of collaborative UAV decision optimization and cooperative control (e.g., search and rescue, collaborative mapping).

High quality papers based on theories, applications, or experimental data are welcome.

Guest Editor

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Deadline for manuscript submissions

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Aerospace adheres to rigorous peer-review as well as editorial processes and publishes high quality manuscripts that address both the fundamentals and applications of aeronautics and astronautics. Our goal is to enable rapid dissemination of high impact works to the scientific community.

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