IEEE ICUS 2021

Invited Session Summary

Title of Session

Advances in Learning, Optimization, and Filtering for Multi-agent Systems

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Details of Session(including aim and scope)

Multi-agent system (MAS) has long received tremendous attention from scholars and practitioners. In recent years, as collective intelligence (or distributed artificial intelligence) becomes popular, MAS develops new multidisciplinary features where potential for bridging the gap among control theory, state estimation, machine learning, optimization, and gaming techniques have been shown. On the other hand, MAS has become a hot research topic for applications of unmanned systems. Such unmanned platforms include unmanned aerial vehicles (UAVs), unmanned ground vehicles (UGVs), unmanned surface vehicles (USVs), unmanned underwater vehicles (UUVs) and robots.

The purpose of this session is to bring together experts, scientists and engineers throughout the world to present and share their recent advances and innovative ideas related to MAS, especially from a multidisciplinary perspective. The topics of paper include, but are not limited to:

- theoretical foundation and new analysis framework
- novel cooperative/collective sensing, communication, decision-making, control, and learning methods

- basic autonomous platforms, innovative applications and new trends for MAS.