

IEEE ADPRL 2017 Special Session:

Title: Novel Distributed Adaptive Dynamic Programming and Reinforcement Learning Designs for Networked Multi-Agent Systems

Aim: Through the recent years, novel distributed adaptive dynamic programming (ADP) and reinforcement learning (RL) approaches and frameworks have been developed, including deep reinforcement learning, biologically inspired reinforcement learning, game theory-reinforcement learning (GT-RL) and so on, to effectively address the intelligent and resilient issues in networked multi-agent systems. Many emerging smart and network connected multi-agent systems are using online learning based approaches to find real-time high-efficient control, such as smart grid, microgrid, autonomous systems, smart communities, networked control systems and cyber-physical systems. They are able to efficiently solve the optimal and resilient designs for networked multi-agent systems in a distributed and timely manner as well as relaxing the impractical requirement about actual knowledge of system dynamics. This special session will enhance the discussion among different societies to explore more challenging cross-disciplinary topics along this direction.

Scope and Topics:

This special session will provide a forum to deliver and discuss original research results and new techniques in distributed ADP and deep RL for networked multi-agent systems. We are particularly interested in the following topics:

- Distributed ADP and RL design for networked multi-agent systems
- Distributed ADP and RL based optimal control
- Distributed ADP and RL based robust adaptive control
- Distributed ADP and RL based event-triggered/self-triggered control
- Distributed ADP and RL based network and control co-design
- Biologically inspired distributed ADP and RL for multiplayer games
- Intelligent task allocation for networked multi-UAVs

- Novel distributed ADP and Deep RL algorithms, stability analysis and convergence
- New transfer learning for autonomous systems
- Hybrid ADP and RL development with application to complex systems
- Intelligent distributed decision making for partially observable systems

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IMPORTANT DATES

- Paper Submission Deadline: July 2, 2017
- Notification of Acceptance: August 27, 2017
- Final Paper Submission Deadline: September 24, 2017
<http://www.ele.uri.edu/ieee-ssci2017/ImportantDates.htm>

Pape Submission:

- Please follow IEEE SSCI 2017 Submission Website:
<http://www.ele.uri.edu/ieee-ssci2017/PaperSubmission.htm>

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