DEPARTMENT OF MECHANICAL ENGINEERING
WILLIAM MAXWELL REED SEMINAR SERIES

"Multi-Agent Optimization: Distributed Algorithms and Resilience"

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Abstract: Multi-agent systems, in which a group of interconnected systems work as a cohesive whole, usually offer better autonomy, flexibility and robustness than single monolithic systems. Because of the underlying communication constraints among agents, algorithms for multi-agent systems must be distributed, which achieve global objectives through only local coordination among nearby agents. In this seminar, we will first present a series of distributed algorithms for solving linear equations as well as generalization to achieve least-square solutions. Second, we will introduce a distributed algorithm to solve multi-agent optimization in general, and achieves exponential stability based on the integral feedback. Third, we will discuss a method to achieve resilience for consensus-based distributed algorithms without identification and isolation of malicious agents.

Bio: Prof. Shaoshuai Mou is an Assistant Professor in the School of Aeronautics and Astronautics at Purdue University, where he directs the Autonomous and Intelligent Multi-agent Systems (AIMS) Lab and also co-direct Purdue's new Center for Innovation in Control, Optimization and Networks (ICON). Before joining Purdue, he received a Ph.D. in Electrical Engineering at Yale University in 2014 and worked as a postdoc researcher at MIT for a year after that. His research interests include multi-agent autonomy and learning, distributed algorithms for control and optimization, human-machine teaming, resilience & cybersecurity, and also experimental research involving autonomous air and ground vehicles. For information, please refer to https://engineering.purdue.edu/ICON.

Date: Friday, Nov. 20th
Time: 3:00PM EST
Place: https://uky.zoom.us/j/92940732923
Contact: Dr. Alexandre Martin 257-4462

Attendance open to all interested persons

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