Seminar Series

Interacting with Distributed Multi-Robot Networks

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Abstract

The last few years have seen significant progress in our understanding of how one should structure large teams of robot networks. New control, coordination, and communication strategies have emerged and, in this talk, I will summarize some of these developments. In particular, I will discuss how to go from local control rules to global behaviors in a systematic manner in order to realize distributed geometric objectives, such as achieving and maintaining formations, area coverage, and swarming behaviors. I will also investigate how users can interact with networks of mobile robots in order to inject new information and objectives.

Biography of Speaker

Magnus Egerstedt is the Schlumberger Professor in the School of Electrical and Computer Engineering at the Georgia Institute of Technology, where he also holds an adjunct appointment in the School of Interactive Computing. He received the M.S. degree in Engineering Physics and the Ph.D. degree in Applied Mathematics from the Royal Institute of Technology, Stockholm, Sweden, and the B.A. degree in Philosophy from Stockholm University. Dr. Egerstedt conducts research in the areas of control theory and robotics, with particular focus on control and coordination of complex networks, such as multi-robot systems, mobile sensor networks, and cyber-physical systems. He is the director of the Georgia Robotics and Intelligent Systems Laboratory, a Fellow of the IEEE, and a recipient of the ECE/GT Outstanding Junior Faculty Member Award, the Georgia Tech Teaching Efficiency Award, and the U.S. National Science Foundation CAREER Award.