Thursday, February 20th
Scaife Hall Auditorium
Room 125 at 4:30 p.m.
Refreshments at 4:00 p.m.

Magnus Egerstedt
Schlumberger Professor
Associate Chair for Research
Electrical and Computer Engineering
Georgia Institute of Technology

Magnus Egerstedt is the Schlumberger Professor in the School of Electrical and Computer Engineering at the Georgia Institute of Technology, where he serves as Associate Chair for Research and External Affairs. 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, the B.A. degree in Philosophy from Stockholm University, and was a Postdoctoral Scholar at Harvard 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. Magnus Egerstedt is the Deputy Editor-in-Chief for the IEEE Transactions on Network Control Systems, the director of the Georgia Robotics and Intelligent Systems Laboratory (GRITS Lab), a Fellow of the IEEE, and a recipient of the ECE/GT Outstanding Junior Faculty Member Award, the HKN Outstanding Teacher Award, the Alum of the Year Award from the Royal Institute of Technology, and the U.S. National Science Foundation CAREER Award.

From Global Properties to Local Rules for Multi-Agent Systems

The last few years have seen significant progress in our understanding of how one should structure multi-robot systems. New control, coordination, and communication strategies have emerged and, in this talk, we discuss some of these developments. In particular, we will show how one can go from global, geometric, team-level specifications to local coordination rules for achieving and maintaining formations, area coverage, and swarming behaviors. One aspect of this concerns how users can interact with networks of mobile robots in order to inject new, global information and objectives. We will also investigate what global objectives are fundamentally implementable in a distributed manner on a collection of spatially distributed and locally interacting agents.

ECE Seminar Hosts
Lujo Bauer, chair <lbauer@cmu.edu>
Soummya Kar <soummyak@ece.cmu.edu>
Gianluca Piazza <piazza@ece.cmu.edu>

Carnegie Mellon University