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Pre-conference Workshop 1
Control and Optimization for Networked Systems

Speaker: Fumin Zhang, Georgia Institute of Technology, USA

Title: Bio-Inspired Autonomy for Mobile Sensor Networks

Abstract: There is an increasing trend for robots to serve as networked mobile sensing platforms that are able to collect data and interact with humans in various types of environment in unprecedented ways. The need for undisturbed operation posts higher goals for autonomy. This talk reviews recent developments in autonomous collective foraging in a complex environment that explicitly integrates insights from biology with models and provable strategies from control theory and robotics. The methods are rigorously developed and tightly integrated with experimental effort with promising results achieved.

Biography: Dr. Fumin Zhang is Professor in the School of Electrical and Computer Engineering at the Georgia Institute of Technology. He received a PhD degree in 2004 from the University of Maryland (College Park) in Electrical Engineering, and held a postdoctoral position in Princeton University from 2004 to 2007. His research interests include mobile sensor networks, maritime robotics, control systems, and theoretical foundations for cyber-physical systems. He received the NSF CAREER Award in September 2009 and the ONR Young Investigator Program Award in April 2010. He is currently serving as the co-chair for the IEEE RAS Technical Committee on Marine Robotics, associate editors for IEEE Journal of Oceanic Engineering, Robotics and Automation Letters, IEEE Transactions on Automatic Control, and IEEE Transactions on Control of Networked Systems, and the deputy editor-in-chief for the Cyber-Physical Systems Journal.