

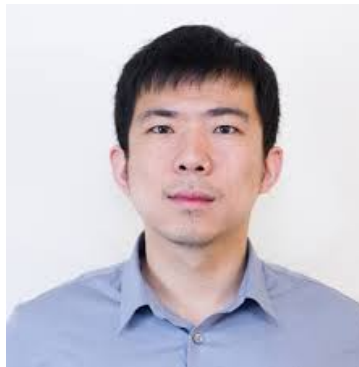


181 Longwood Avenue
Boston, Massachusetts 02115-5804

Department of Medicine
Channing Division of Network Medicine

Channing Network Science Seminar

Jan 23, 2015, 11am @ 5th floor conference room



Speaker: Shaoshuai Mou, Ph.D

Department of Mechanical Engineering
Massachusetts Institute of Technology

<https://sites.google.com/site/shaoshuaimou84/>

Title: **Distributed Control of Multi-Agent Networks**

Abstract: Research focus in the field of systems and control is evolving from single monolithic system to teams of cheap but interconnected systems achieving global objectives using only local coordination. This has led to a booming area “distributed control of multi-agent networks.” Two problems in this area will be discussed. First, we will introduce a distributed algorithm for solving large systems of linear algebraic equations in multi-agent networks. This algorithm only requires that each agent knows part of the large system of linear equations and communicates with its nearby neighbors. The algorithm enables each agent to achieve the solution of the linear equation exponentially fast even if the network is time-varying. Second, we will show that the gradient method in the area of multi-agent formation control is not robust in the sense that if two neighboring agents have even slightly different understandings of the desired distance between them, a rigid undirected formation will converge to rotate in the plane. An interesting observation is that this type of misbehavior of a multi-agent formation in 3D will be a helix.

Short Bio: Shaoshuai Mou finished his Ph. D. study in 2014 under the supervision of Prof. A. Stephen Morse at Yale University. He worked as a visiting scholar in Prof. Brian D. O. Anderson's lab at the Australian National University in March 2014. Currently he is a postdoctoral associate in Prof. Domitilla Del Vecchio's group at MIT. Shaoshuai's research interest includes multi-agent networks, distributed control, and gene transcriptional networks.

Hosted by Yang-Yu Liu