

学术报告会

时间: 5月25日(周五) 10:00-11:00

地点: 电院群楼2-406会议室

Dynamic Models of Appraisal Networks

Explaining Collective Learning

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Abstract:

In this talk we introduce models of learning processes in teams of individuals who collectively execute a sequence of tasks and whose actions are determined by individual skill levels and networks of interpersonal appraisals and influence. First, we propose and study three closely-related models, with increasing complexity, starting with a centralized manager-based assignment and learning model, and finishing with a social model of interpersonal appraisal, assignments, learning, and influences. We show how rational optimal behavior arises along the task sequence for each model and discuss conditions of sub-optimality. Second, we briefly introduce some ongoing further interdisciplinary studies on collective learning, including novel models with more degrees of freedom, collective learning with noise and memory, and human-subject experimental protocols. Our work builds insightful connections among replicator dynamics from evolutionary games, influence networks from mathematical sociology, and transactive memory systems from organization science.

Biography:

Wenjun Mei received the B.Sc. degree in Theoretical and Applied Mechanics from Peking University, and the Ph.D. degree in Mechanical Engineering from University of California, Santa Barbara. He will be a postdoctoral researcher at ETH Zurich from May 2018. His current research interests include dynamics of network systems, mathematical sociology, network games and evolutionary dynamics.