Artificial Intelligence Initiative (Aii)
https://ai.ucf.edu/

Invited Speaker
Mr. Chuanhao Li, University of Virginia

“Interactive Decision Making in Multi-agent Intelligent Systems”

Monday, May 22, 2023 • 11:30AM • HEC 101B • Zoom

Abstract:
Interactive decision making (e.g., bandit and reinforcement learning) is a promising paradigm for developing intelligent systems capable of efficiently exploring unknown environments. It has achieved remarkable success in recommender systems, clinical decision systems, robotics and cyber-physical systems, game playing, etc. Most prior efforts in the theoretical foundations of this paradigm consider the single agent setting, with strategic exploration being the primary focus. However, in real-world scenarios, intelligent systems typically involve multiple agents, e.g., AI and human beings, which gives rise to both new challenges and new opportunities.

In this talk, I will first introduce our recent works that enable collaborative decision making under various practical scenarios, e.g., heterogeneous, non-stationary, and distributed environments, with improved sample efficiency guarantee by utilizing agents’ task similarities. I will then present our works that further consider interactive decision making with strategic agents, and discuss, as the system designer, how to cope with different strategic behaviors of the agents to achieve desirable decision outcomes. I will also share potential future directions of interactive decision making and visions to build practical decision-making systems for real-world applications.

Bio:
Chuanhao Li is a Ph.D. candidate in the Department of Computer Science at University of Virginia, advised by Dr. Hongning Wang. His research interest lies in the intersection of interactive decision making, optimization and game theory, with an emphasis on developing provably efficient solutions to address challenges encountered in real-world intelligent systems, such as non-stationarity, heterogeneity, limited communication, and strategic agents. His research has been published at top-tier venues such as ICLR, ICML, NeurIPS, AISTATS, etc.