UNIVERSITY OF MACAU
FACULTY OF SCIENCE AND TECHNOLOGY
AND
INSTITUTE OF COLLABORATIVE INNOVATION

"Integrating Learning with Game Theory for Societal Challenges"

by

Prof. Fei Fang
Institute for Software Research, School of Computer Science,
Carnegie Mellon University, USA

Date: **14/August/2019 (Wednesday)**
Time: **15:15 – 16:15**
Venue: **N1-1004, Centre for Innovation and Entrepreneurship, Guest House, University of Macau**

Abstract

There is a rising interest in developing artificial intelligence-based tools to help address societal challenges. Motivated by these challenges, we have proposed game theory and machine learning/reinforcement learning-based models and algorithms for problems with strategic interactions among agents. In this talk, I will introduce our models and algorithms that have led to two successfully deploy applications: one used by US Coast Guard for protecting the Staten Island Ferry in New York City since April 2013, the other used in multiple conservation areas around the world for anti-poaching effort. In addition, I will highlight our most recent advances in integrating deep learning with game theory, including computing equilibrium by learning from self-play and end-to-end learning of game parameters.

Biography

Fei Fang is an Assistant Professor at the Institute for Software Research in the School of Computer Science at Carnegie Mellon University. Before joining CMU, she was a Postdoctoral Fellow at the Center for Research on Computation and Society (CRCS) at Harvard University. She received her Ph.D. from the Department of Computer Science at the University of Southern California in June 2016. She received her bachelor degree from the Department of Electronic Engineering, Tsinghua University in July 2011. Her research lies in the field of artificial intelligence and multi-agent systems, focusing on integrating game theory and mechanism design with machine learning. Her work has been motivated by and applied to security, sustainability, and mobility domains, contributing to the theme of AI for Social Good. Her work has won the Distinguished Paper at the 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence (IJCAI-ECAI'18), Innovative Application Award at Innovative Applications of Artificial Intelligence (IAAI'16), the Outstanding Paper Award in Computational Sustainability Track at the International Joint Conferences on Artificial Intelligence (IJCAI'15). Her dissertation is selected as the runner-up for IFAAMAS-16 Victor Lesser Distinguished Dissertation Award, and is selected to be the winner of the William F. Ballhaus, Jr. Prize for Excellence in Graduate Engineering Research as well as the Best Dissertation Award in Computer Science at the University of Southern California. Her work has been deployed by the US Coast Guard for protecting the Staten Island Ferry in New York City since April 2013. Her work has led to the deployment of PAWS (Protection Assistant for Wildlife Security) in multiple conservation areas around the world, which provides predictive and prescriptive analysis for anti-poaching effort.

ALL ARE WELCOME!