

**Center for Artificial Intelligence in Society presents...**

# **Dr. Fei Fang**

## **Spatio-Temporal Pricing for Ridesharing Platforms**

Ridesharing systems match drivers and riders via priced trips, and employ dynamic surge pricing to balance supply and demand. When prices fail to be temporally or spatially smooth, drivers may prefer to decline matches or turning off their apps for some period of time, either waiting for higher prices or driving to another region. This leads to failure of individual rationality and inefficient outcomes.

We study the welfare-optimal matching of drivers with riders (or otherwise tell the drivers where to go.) The goal is to compute anonymous, spatial-temporal trip-prices that ensure envy-freeness and straightforward participation of drivers. We obtain positive results under the assumption of complete information, impatient riders, and drivers who remain in the system past the end of the planning horizon. Ongoing work includes generalizing the model to bring in uncertainty and information asymmetry on future demand/supply and studying drivers' collusion.



**Wednesday, July 26th,**

**11-11:30 a.m.**

**Tutor Hall (RTH) 217**

Dr. Fang received her PhD in Computer Science at USC. Her research lies in computational game theory for security and sustainability (e.g. protecting the Staten Island Ferry by the US Coast Guard, combatting illegal tiger poaching in a Southeast Asia conservation area). Starting in August, Dr. Fang will be an assistant professor at the Institute for Software Research at Carnegie Mellon University.