Speaker: Lillian Ratliff, UC Berkeley

Title: The Emerging Data Market: Adaptive Incentives for Smart, Connected Infrastructure

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Abstract:
The next generation urban ecosystem empowered by the internet of things has at its core a shared economy where physical resources and data are easily aggregated and exchanged. In particular, advances in technology have lead to the proliferation of smart devices that provide access to streaming data and platforms for novel sharing mechanisms.

This has, in turn, resulted in an emerging marketplace in which data is a commodity. The ease with which data and resources can be shared has led many urban constituents to become aware of the value of their data and its usefulness for operations. In such an environment, new learning and optimization schemes which consider users as strategic data sources and resource seekers are needed.

In this talk, we will discuss the emerging data market, its incentive structure (players and their motivations), and tools for learning with strategic data sources. Focusing on the design of adaptive incentive mechanisms under adverse selection, we will construct an algorithm for online utility learning and incentive design and show convergence results for both the case where players are rational (play according to Nash) and myopic. We will see through a tutorial example how the algorithm performs, and conclude with some open questions and future directions.
