



Seminar/Talk

Learning With and From People

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Host:

People are becoming an integral part of computational systems, fueled primarily by recent technological advancements as well as deep-seated economic and societal changes. Consequently, there is a pressing need to design new data science and machine learning frameworks that can tackle challenges arising from human participation (e.g. questions about incentives and users' privacy) and can leverage people's capabilities (e.g. ability to learn).

In this talk, I will share my research efforts at the confluence of people and computing to address real-world problems. Specifically, I will focus on collaborative consumption systems (e.g. shared mobility systems and sharing economy marketplaces like Airbnb) and showcase the need to actively engage users for shaping the demand who would otherwise act primarily in their own interest. The main idea of engaging users is to incentivize them to switch to alternate choices that would improve the system's effectiveness. To offer optimized incentives, I will present novel multi-armed bandit algorithms and online learning methods in structured spaces for learning users' costs for switching between different pairs of available choices. Furthermore, to tackle the challenges of data sparsity and to speed up learning, I will introduce hemimetrics as a structural constraint over users' preferences. I will show experimental results of applying the proposed algorithms on two real-world applications: incentivizing users to explore unreviewed hosts on services like Airbnb and tackling the imbalance problem in bike sharing systems. In collaboration with an ETH Zurich spinoff and a public transport operator in the city of Mainz, Germany, we deployed these algorithms via a smartphone app among users of a bike sharing system. I will share the findings from this deployment.

Thursday, March 16, 2017 09:45am - 10:45am

Seminar room Big Ground floor / Office Bldg West (I21.EG.101)



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