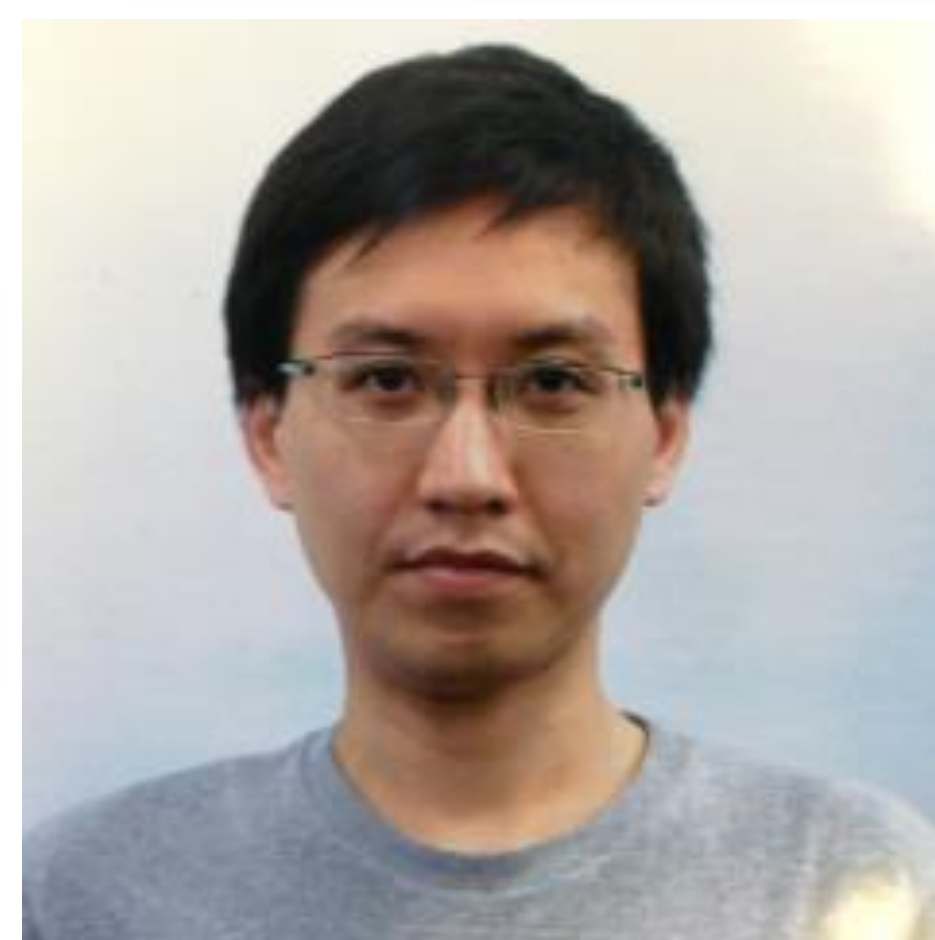




學術報告

Towards Quality-Driven Data Crowdsourcing



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Biography: Xiaowen Gong is an Assistant Professor in the Department of Electrical and Computer Engineering at Auburn University. He received his BEng degree from Huazhong University of Science and Technology, his MSc degree from the University of Alberta, and his PhD degree from the Arizona State University. He was a postdoctoral researcher at The Ohio State University. His research interests include wireless networking and mobile computing, with focuses on crowdsourcing, mobile social networks, fog networking and computing, and privacy in mobile networks. He received the Runner-up Best Paper Award from IEEE INFOCOM, and Palais Outstanding Doctoral Student Award from the school of ECEE at ASU in 2015.

Data crowdsourcing has found a wide range of applications by leveraging the “wisdom” of a potentially large crowd of users. A key metric of crowdsourcing is data accuracy. It is important to leverage quality-aware crowdsourcing which allocates tasks to users and aggregate users' data based on data quality. It needs to overcome the obstacle that data quality is often unknown. In this talk, I will present our recent research on quality-driven crowdsourcing along two directions. In one direction, we devise truthful mechanisms that incentivize users to truthfully report their quality and data to the requester, and truthfully make effort as desired by the requester. In the other direction, we develop online quality learning algorithms that estimate users' data quality on the fly while allocating tasks to users based on the estimated data quality. These studies draw on synergistic integration of models and methods from statistical inference, mechanism design, and reinforcement learning.