

UNIVERSITY OF CHICAGO  
DEPARTMENT OF COMPUTER SCIENCE

PRESENTS:

*“Towards an Equitable and Trustworthy Economy of Data”*



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**Abstract:**

The data economy is a rising ecosystem in which data are produced, distributed, and consumed at an unprecedented scale. On the one hand, the current data economy creates new levels of prosperity by driving rapid advances in machine learning and automation. On the other hand, it has some fundamental challenges that need to be addressed. First and foremost, how much is data worth? Data is valuable, yet a principled data valuation method is lacking. The answer to this question has profound implications: it will open up new data sources by facilitating and incentivizing data sharing and reduce economic inequality by allowing individuals to profit from their data. We also need to address the issues of privacy and security that arise from data-driven applications.

In this talk, I will mainly present the theory and algorithms for data valuation. I will start by introducing a principled notion for data value and then present a suite of algorithms that we developed to efficiently compute the data value. I will also discuss the applications of our data valuation techniques to the tasks beyond data pricing, such as detecting noisy labels. At last, I will present my work in the space of privacy-preserving and trustworthy data analytics.

**Bio:**

*Ruoxi is currently a Postdoctoral Scholar in the Electrical Engineering and Computer Science (EECS) Department at UC Berkeley. She earned her PhD in the EECS Department from UC Berkeley in 2018 and a B.S. from Peking University in 2013. Ruoxi's research interest lies broadly in the span of machine learning, security, privacy, and cyber-physical systems. Her recent work is focused on developing theoretical foundation and practical algorithms for improving the fairness, privacy, and security of the data economy. Ruoxi is the recipient of several fellowships, including the Chiang Fellowship for Graduate Scholars in Manufacturing and Engineering, the 8108 Alumni Fellowship, and the Okamoto Fellowship. She was selected for the Rising Stars in the EECS program in 2017. Ruoxi's work has been featured in multiple media outlets, including MIT Technology Review, IEEE Spectrum, and Synced.*

**Wednesday, February 26, 2020**

**3:30 pm**

**Crerar 390**

**Host: Mike Franklin**