WEICHAO MAO

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Education

- **Shanghai Jiao Tong University (SJTU)** — Shanghai, China
  B.S. in Computer Science — Sep. 2015 – Jun. 2019 (Expected)
  - GPA: 91.84/100 (top 4%).

Research Interests

- **Computational Economics**: game theory, mechanism design, pricing, information design.

Publications

- **Weichao Mao**, Zhenzhe Zheng, Fan Wu, "Pricing for Revenue Maximization in IoT Data Markets: An Information Design Perspective", accepted to the 38th IEEE International Conference on Computer Communications (**INFOCOM** 2019).
- **Weichao Mao**, Zhenzhe Zheng, Fan Wu, Guihai Chen, "Online Pricing for Revenue Maximization with Unknown Time Discounting Valuations", in Proceedings of the 27th International Joint Conference on Artificial Intelligence (**IJCAI** 2018).
- Zhenzhe Zheng, **Weichao Mao**, Fan Wu, Guihai Chen, "Challenges and Opportunities in IoT Data Markets", accepted to the 4th International Workshop on Social Sensing (**SocialSens** 2019).
- Shiyou Qian, **Weichao Mao**, Jian Cao, Frederic Le Mouel, Minglu Li, "Endowing Matching Algorithm with Adaptability in Content-based Publish/Subscribe Systems", accepted to the 38th IEEE International Conference on Computer Communications (**INFOCOM** 2019).

Research Projects

- **Data Marketplace Design** — Apr. 2017 – Present
  Research Assistant at Advanced Network Laboratory, SJTU. — Advisor: Prof. Fan Wu
  - Analyzed the unique characteristics of data as a commodity and proposed a market model from an information structure design perspective.
  - Reformulated the revenue maximization problem as a polynomial convex program. Considered bounded rationality and proposed a practical pricing mechanism with tight logarithmic approximation ratio.
- **Online Pricing Under Discounting Valuations** — Sep. 2017 – Apr. 2018
  Research Assistant at Advanced Network Laboratory, SJTU. — Advisor: Prof. Fan Wu
  - Considered the revenue maximization problem for digital goods when buyer valuations are discounting over time in unknown and heterogeneous discount rates.
  - Proposed an online pricing mechanism based on a non-stationary multi-armed bandit model. Proved its competitive ratio towards the *ex ante* benchmark.
- **Event Distribution Algorithm Design** — Oct. 2016 – Jun. 2017
  Research Assistant at Shanghai Institute for Advanced Comm. & Data Sci. — Advisor: Prof. Shiyou Qian
  - Designed a self-adaptive content-based event distribution system to deal with dynamic subscriptions and fluctuating workloads as in stock exchange APIs.
  - Tested its performance on a distributed network environment with real-world stock exchange data stream.

Teaching Experience

- **CS 499: Mathematical Foundations of Computer Science** — Spring 2018
  Teaching Assistant. Instructor: Prof. Dominik Scheder — Shanghai Jiao Tong University