Luhao Zhang

Contact Information

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Research Area

Stochastic control, robust optimization, data-driven decision-making under uncertainty, machine learning, quantitative finance

Education

The University of Texas at Austin, Austin, TX, USA

Ph.D. in Mathematics — Aug 2018 - Aug 2023
Advisor: Thaleia Zariphopoulou

Xi'an Jiaotong University, Xi'an, Shaanxi, China

B.S. in Mathematics and Applied Mathematics (Honors Program) — Aug 2014 - 2018
Special Class for the Gifted Young

Research Papers

Publications

1. Luhao Zhang, Jincheng Yang, Rui Gao. *Optimal Robust Policy for Feature-Based Newsvendor* (2022), ***Management Science***, forthcoming.

Preprints

2. Luhao Zhang, Jincheng Yang, Rui Gao. *A Simple and General Duality Proof for Wasserstein Distributionally Robust Optimization*, submitted to ***Operations Research***.
3. Jincheng Yang, Luhao Zhang, Ningyuan Chen, Rui Gao, Ming Hu. *Decision-making with Side Information: A Causal Transport Robust Approach*, preprint to be submitted to ***Operations Research***.
4. Luhao Zhang, Renyuan Xu, Thaleia Zariphopoulou. *Reversible and Irreversible Decisions under Costly Information Acquisition*, preprint to be submitted to ***Operations Research***.

Conference papers

5. Luhao Zhang, Mohsen Ghassemi, Ivan Brugere, Alan Mishler, Niccolo Dalmasso, Vamsi Potluru, Tucker Balch, Manuela Veloso. *Conditional Demographic Parity Through Optimal Transport* (2022), accepted by ***NeurIPS*** Workshop on Algorithmic Fairness through the Lens of Causality and Privacy.

Industry Experience

J.P.Morgan Chase, AI Research, New York, NY

AI Researcher (Intern) — June - Aug 2022

- Developed an efficient algorithm to achieve conditional demographic parity using causal transport distance
- Preliminary results accepted by *NeurIPS Workshop on Algorithmic Fairness through the Lens of Causality and Privacy*

Award

Frank Gerth III Teaching Excellence Award, UT Austin	2021
Selected to present at the Cornell ORIE Young Researchers Workshop	Summer 2021
Graduate School Summer Fellowship, UT Austin,	Summer 2021
Graduate Continuing Bruton Fellowship, UT Austin,	Spring 2022
Professional Development Award, UT Austin,	Spring, Fall 2022

Invited Talks

- Robust Optimization Webinar Series — May 2021
- International Conference of the Chinese Scholars Association for Management Science and Engineering (CSAMSE), Shanghai Jiaotong University — July 2021
- Cornell ORIE Young Researchers Workshop, Ithaca, NY — Oct 2021
- INFORMS Annual Meeting, Anaheim, CA — Oct 2021
- Conference on Artificial Intelligence, Machine Learning, and Business Analytics, Rutgers University — Dec 2021
- Texas Women in Math Symposium, Rice University — Feb 2022
- INFORMS Optimization Society Conference, Greenville, SC — March 2022
- SIAM Annual Meeting, Pittsburgh, PA — July 2022
- INFORMS Annual Meeting, Indianapolis, IN — Oct 2022

Professional Service

Referee

- Mathematical Programming
- 3rd ACM International Conference on AI in Finance

Session Chair

- INFORMS 2021 invited session of Learning and Decision-making with Contextual Information
- INFORMS 2022 invited session of Data-driven Decision Making

Teaching experience

UT Austin, Teaching Assistant

- M408D *Sequences, Series, and Multivariable Calculus* 4.2/5.0 — Fall 2018
- M348 *Scientific Computation in Numerical Analysis* N/A — Spring, Fall 2019
- M427L *Advanced Calculus for Applications II* 4.1/5.0 — Spring 2020
- MF325K *Discrete Mathematics* 4.3/5.0 — Summer 2020
- M362K *Probability* 4.3/5.0 — Fall 2020

- M358K *Applied Statistics* 4.0/5.0 — Fall 2021
- M408K *Differential Calculus* 4.5/5.0 — Spring 2021
- M378K *Introduction to Mathematical Statistics* 4.0/5.0 — Spring, Fall 2022

MENTORSHIP

Directed Reading Program

- Sonali Singh, on the topic of *Stochastic Calculus for Finance* — Spring 2020
- Wenxuan Jiang, on the topic of *Stochastic Calculus for Finance* — Fall 2021
- Haoze Yan, on the topic of *Stochastic Programming* — Spring, Fall 2022
- Yuxiang Gao, on the topic of *Elements of Statistical Learning* — Spring 2022