XIAOJIE MAO

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EDUCATION

Cornell University New York, NY
Ph.D. Student in Statistics, with minor in Operatiors Research. 2016.09 –

- Advisors: Nathan Kallus and Madeleine Udell.
- Research Interests: data-driven decision making, causal inference, statistical machine learning.

M.S. in Statistics. 2019.12

Wuhan University Wuhan, China
B.A. in Mathematical Economics. 2012.09 – 2016.06
Top 1% of 2016 graduates (7000+) awarded with 100% tuition waiver, major GPA 3.96 (rank 1/117), National Scholarship for 4 years.

PUBLICATIONS AND PREPRINTS (AUTHORSHIP IN ALPHABETICAL ORDER)

Publications

1. Nathan Kallus, Xiaojie Mao, Angela Zhou (2019). **Assessing Algorithmic Fairness with Unobserved Protected Class Using Data Combination.** *Management Science Special Issue on Data-Driven Prescriptive Analytics, forthcoming.*
   - Preliminary version accepted by NeurIPS 2019 workshop on Fair Machine Learning for Health and ACM FAT* 2020.
   - NeurIPS 2019 travel award.
2. Nathan Kallus, Xiaojie Mao, and Angela Zhou (2019). **Interval Estimation of Individual-level Causal Effects under Unobserved Confounding.** *The 22nd International Conference on Artificial Intelligence and Statistics.*
3. Jiahao Chen, Nathan Kallus, Xiaojie Mao, Geoffry Svacha, Madeleine Udell (2019). **Fairness Under Unawareness: Assessing Disparity When Protected Class is Unobserved**. *ACM FAT* 2019: Conference on Fairness, Accountability, and Transparency in Machine Learning.*
4. Nathan Kallus, Xiaojie Mao, and Madeleine Udell (2018). **Causal Inference with Noisy and Missing Covariates via Matrix Factorization**. *The 32nd Annual Conference on Neural Information Processing Systems.*

Papers Under Review

1. Yichun Hu, Nathan Kallus, Xiaojie Mao (2019). **Smooth Contextual Bandits: Bridging the Parametric and Non-differentiable Regret Regimes**. *Under review in Operations Research.*
   - **Finalist for Applied Probability Society 2020 Best Student Paper Competition**.
   - Preliminary version accepted by the 33rd Annual Conference on Learning Theory (COLT 2020).

Working Papers

1. Nathan Kallus, Xiaojie Mao (2020). **Stochastic Optimization Forests.** *Submitted to Management Science.*

2. Nathan Kallus, Xiaojie Mao (2020). **On the Role of Surrogates in the Efficient Estimation of Treatment Effects with Limited Outcome Data.** *arXiv preprint arXiv: 2003.12408.*

3. Nathan Kallus, Xiaojie Mao, Masatoshi Uehara (2019). **Localized Debiased Machine Learning: Efficient Estimation of Quantile Treatment Effects, Conditional Value at Risk, and Beyond.** *Submitted to Journal of the Royal Statistical Society: Series B.*

TEACHING

Cornell University
Teaching assistant

- ORIE 5750/CS 5785 Applied Machine Learning, 2019 Fall.
- STSCI 5110/ILRST 5110 Statistical Methods for Social Science, 2018 Spring.
- BTRY 6010/ILRST 6100 Statistical Methods I, 2016 Fall, 2017 Fall.

Wuhan University
Teaching assistant

- Introduction to Probability Theory, 2015 Fall.
- Introduction to Mathematical Statistics, 2015 Spring.

EXPERIENCE

Data Scientist Intern at Capital One, New York, NY 2018.06 – 2018.08

PRESENTATIONS

Online Causal Inference Seminar	2020.09
Kellogg-Wharton OM Workshop	2020.07
Conference of Learning Theory 2020	2020.07
Tsinghua University, Department of Management Science and Engineering	2020.01
Shanghai University of Finance and Economics, Institute for Interdisciplinary Sciences	2020.01
Shanghai Jiaotong University, John Hopcroft Center for Computer Science	2020.01
Wuhan University, Department of Mathematical Economics and Mathematical Finance	2020.01
Informs Annual Meeting 2019 invited session "Learning & Optimization in Healthcare"	2019.10
Informs Annual Meeting 2019 invited session "Data-Driven Models and Algorithms"	2019.10
Annual Young Researchers Workshop, Cornell ORIE Department	2019.10
ACM FAT* 2019	2019.01
Capital One workshop on Fair and Responsible AI in Finance	2018.10

MEDIA COVERAGE

Cornell Chronicle (2019). **Study: AI may mask racial disparities in credit, lending.**
Yahoo! Finance (2019). **When Algorithms Are Racist: How to Protect Against Biased Algorithms.**
EE Times India (2019). **Does AI Amplify our own Bias?**

MISCELLANEOUS

Service	Referee for NeurIPS 2018, 2019, 2020, ICML 2019, 2020, AISTATS 2019, 2020. Program committee for NeurIPS 2018 workshop *"Challenges and Opportunities for AI in Financial Services: the Impact of Fairness, Explainability, Accuracy, and Privacy"* and NeurIPS 2020 workshop *"Fair AI in Finance"*.
Programming	R, Python, Julia.
Language	Native in Chinese, Proficient in English.