

Ming Gao

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Research Interests

Model selection, High-dimensional statistics, Graphical model, Causal discovery

Education

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|--|-------------------|
| Ph.D. in Econometrics and Statistics | 2021.09 – now |
| M.B.A. | 2023.09 – now |
| Booth School of Business, University of Chicago, Chicago, IL, USA
Advisor: Bryon Aragam | |
| M.Sc. in Statistics | 2019.09 – 2021.04 |
| Department of Statistics, University of Chicago, Chicago, IL, USA
Advisor: Jingshu Wang | |
| B.Sc. in Statistics | 2015.09 – 2019.06 |
| School of Statistics, Renmin University of China, Beijing, China | |

Publications

9. Jin-Hong Du, Tianyu Chen, **Ming Gao**, and Jingshu Wang. [Joint trajectory inference for single-cell genomics using deep learning with a mixture prior](#). *PNAS*, to appear.
8. Yuhao Wang, **Ming Gao**, Wai Ming Tai, Bryon Aragam, and Arnab Bhattacharyya. [Optimal estimation of gaussian \(poly\)trees](#). In *International Conference on Artificial Intelligence and Statistics* PMLR, 2024.
7. **Ming Gao**, Wai Ming Tai, and Bryon Aragam, 2023. [Optimal neighbourhood selection in structural equation models](#)
6. Cong Zhang and **Ming Gao**. [Optimizing return forecasts: A bayesian intermediary asset pricing approach](#). *SSRN*, 2023.
5. Yuxuan Guo, **Ming Gao**, and Xiaoling Lu. [Multivariate change point detection for heterogeneous series](#). *Neurocomputing*, 2022.
4. **Ming Gao**, Wai Ming Tai, and Bryon Aragam. [Optimal estimation of gaussian dag models](#). In *International Conference on Artificial Intelligence and Statistics* PMLR, 2022.
3. **Ming Gao** and Bryon Aragam. [Efficient bayesian network structure learning via local markov boundary search](#). *Advances in Neural Information Processing Systems*, 34:4301–4313, 2021.

2. Goutham Rajendran, Bohdan Kivva, **Ming Gao**, and Bryon Aragam. [Structure learning in polynomial time: Greedy algorithms, bregman information, and exponential families](#). *Advances in Neural Information Processing Systems*, 34:18660–18672, 2021.
1. **Ming Gao**, Yi Ding, and Bryon Aragam. [A polynomial-time algorithm for learning nonparametric causal graphs](#). *Advances in Neural Information Processing Systems*, 33:11599–11611, 2020.

Professional Service

Reviewer

- **Conferences:** ICML 2023-2024, NeurIPS 2022-2024, AISTATS 2022-2024, AAAI 2025

Teaching Experience

Teaching Assistant

- BUSN 41901: Probability and Statistics (PhD), Autumn, 2023-2024
- BUSN 41000: Business Statistics (MBA), Winter, 2024-2025

Awards

Arnold Zellner Doctoral Prize	Chicago Booth, 2024
Stevens Doctoral Program research funding	Chicago Booth, 2023 – 2024
Ph.D Program Fellowship	Chicago Booth, 2021 – now
Outstanding Thesis Award	RUC, 2019

Internship Experience

Data Analyst Intern, 2018.12 – 2019.05

[Department of Dynamic Drilling Computing Engineering, Schlumberger](#), Beijing, China

Project: Apply convolutional neural network on drilling trajectory to retrieve the potential geometry patterns contributing to better Torque & Drag evaluation.

Data Analyst Intern, 2018.07 – 2018.08

[Department of Science and Technology, Industrial Bank of China](#), Shanghai, China

Project: Apply random forest to identify loan fraud or overdue.

Quantitative Research Intern, 2018.01 – 2018.03

[Lion Fund Management](#), Beijing, China

Project: Assist in the development of stock-trading strategies, processing, validity recognition, selection and synthesis of the factors in multi-factor models.