Weibin Mo

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Contact Information

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Appointment

Department of Quantitative Methods, Daniels School of Business
Purdue University **June 2022 - Current**
West Lafayette, IN, USA
Assistant Professor of Management (Tenure-Track)

Education

University of North Carolina at Chapel Hill **May 2021**
Chapel Hill, NC, USA
Ph.D. in Statistics

Nankai University **June 2016**
Tianjin, China
B.B.A. in Business Administration
B.S. in Mathematics

Research Interests

- Statistical machine learning and reinforcement learning
- Personalized decision marking
- Causal inference and semiparametric inference
- Robust optimization

Publications

Journals

1. Sanchez Gomez, J. A., **Mo, W.**, Zhao, J., and Liu, Y. (2025+). Hub detection in Gaussian Graphical Models. *Journal of the American Statistical Association*, to appear.
2. **Mo, W.**, and Liu, Y. (2022). Efficient learning of optimal individualized treatment rules for heteroscedastic or misspecied treatment-free effect models. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 84(2): 440-472. DOI: 10.1111/rssb.12474.
3. **Mo, W.**[*], Qi, Z.[*], and Liu, Y. (2021). Learning optimal distributionally robust individualized treatment rules (**with discussion and our rejoinder**). *Journal of the American Statistical Association*,
   - (main paper) 116(533): 659-674, DOI: 10.1080/01621459.2020.1796359;
   - (rejoinder) 116(533): 699-707, DOI: 10.1080/01621459.2020.1866581.

Conference Proceedings

1. Dong, J., **Mo, W.**, Qi, Z., Shi, C., Fang, X., and Tarokh, V. (2023). PASTA: Pessimistic assortment optimization. In *Proceedings of the 40th International Conference on Machine Learning*, 202:8276-8295, available at link.
2. **Mo, W.**, Yu, H., and Liu, C. (2021). Markdown first reinforcement learning pricing with demand learning. In *Amazon Machine Learning Conference 2021*.

Under Review

1. **Mo, W.**, Tang, W., Xue, S., Liu, Y., and Zhu, J. Minimax regret learning for data with heterogeneous sub-populations. Reject and Resubmit at *Journal of the American Statistical Association*.

[*]The authors have equal contributions.

2. Dong, J., **Mo, W.**, Qi, Z., Shi, C., Fang, X., and Tarokh, V. PASTA: A unified framework for offline assortment learning. Under review at *Manufacturing & Service Operations Management*.

3. Sanchez Gomez, J. A., **Mo, W.**, Zhao, J., and Liu, Y. Identifying common hubs in multiple Gaussian graphical models. Under review at the *Annual Conference on Neural Information Processing Systems (NeurIPS 2025)*.

In Preparation

1. **Mo, W.**, and Liu, Y. Efficient learning for optimal dynamic treatment regimes.

2. Dai, Q., **Mo, W.**, Wang, S., and Zhang, Y. Designing staggered rollout experiments with indefinite effect lengths.

Book Chapters

1. **Mo, W.**, and Liu, Y. (2024). A selective review of individualized decision making. In *Statistics in Precision Health* (eds Y. Zhao and D. Chen). ICSA Book Series in Statistics. Springer, Cham. DOI: 10.1007/978-3-031-50690-1_2.

2. **Mo, W.**, and Liu, Y. (2021). Supervised learning. In *Wiley StatsRef: Statistics Reference Online* (eds N. Balakrishnan, T. Colton, B. Everitt, W. Piegorsch, F. Ruggeri and J.L. Teugels), DOI: 10.1002/9781118445112.stat08302.

Teaching

Purdue University

- MGMT 30500 (Business Statistics): Spring 2025, Spring 2024, Spring 2023.
- MGMT 59000 (Multivariate Analysis and Network Data, Master): Spring 2024.
- MGMT 59000 (Causal Learning in Business, Master): Summer 2024.
- MGMT 69000 (Causal Learning, PhD): Spring 2025, Fall 2022.

Service

Department of Quantitative Methods, Purdue University

- Coordinator of the Quantitative Methods seminars in Fall 2023, Spring 2024, Spring 2025.
- Member of the PhD Admission Committee in Spring 2023, Spring 2024.
- Member of the Faculty Hiring Committee in Spring 2024.

Honors

Excellence in Teaching Assistance and Instruction Award **Dec. 2020**
Department of Statistics and Operations Research, UNC-Chapel Hill

Student Paper Competition Winner **Aug. 2020**
Statistical Learning and Data Science Section, American Statistical Association

Cambanis-Hoeffding-Nicholson Award **Dec. 2017**
Department of Statistics and Operations Research, UNC-Chapel Hill
(for outstanding academic performance during first year of Ph.D. studies)

Presentations

- "Minimax Regret Learning for Data with Heterogeneous Sub-Populations", International Chinese Statistical Association (ICSA) 2025 China Conference (Zhuhai, China), June 2025.
- "Minimax Regret Learning for Data with Heterogeneous Sub-Populations", The 2nd Joint Conference on Statistics and Data Science (JCSDS) (Kunming, China), July 2024.
- "Efficient Learning of Optimal Individualized Treatment Rules", International Chinese Statistical Association (ICSA) 2023 China Conference (Chengdu, China), July 2023.
- "Efficient Learning for Personalized Decision Making", the 15th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics) (London, United Kingdom), Dec. 2022.

- "Efficient Learning for Personalized Decision Making", INFORMS Annual Meeting (Indianapolis, IN), Oct. 2022.
- "Efficient Learning of Optimal Individualized Treatment Rules", Center for Data Science, Zhejiang University (Hangzhou, ZJ, China), Oct. 2022.
- "Learning Optimal Distributionally Robust Individualized Treatment Rules", the Fifth ICSA-Canada Chapter Symposium (Banff, AB, Canada), Jul. 2022.

Industrial Experience

Amazon **May 2020 - Aug. 2020; June 2021 - June 2022**
Seattle, WA, USA
Applied Scientist in Supplied Chain Optimization Technologies (SCOT)
Developed machine learning methodologies and algorithms for pricing and inventory management

SAS **June 2019 - Aug. 2019**
Cary, NC, USA
Graduate Statistical Intern in R&D Organization
Statistical programming for SAS procedures

Boehringer Ingelheim Pharmaceuticals **May 2017 - July 2017**
Ridgefield, CT, USA
Biostatistician Intern in Clinical Trial
Post-hoc research on clinical trials for respiratory disease