

Xinran Miao

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(Updated January 2026)

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| Research Interests | Transportability/Generalizability, sensitivity analysis, causal inference, robust statistics. |
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| Education | Ph.D. in Statistics University of Wisconsin-Madison, USA • Advisor: Hyunseung Kang | Fall 2021 - Spring 2026 (Expected) |
| | M.S. in Statistics University of Wisconsin-Madison, USA | Fall 2020 - Spring 2021 |
| | B.S. in Statistics Nankai University, China | Fall 2016 - Spring 2020 |

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| Papers | <ol style="list-style-type: none">8. Miao, X., Zhao, J. and Kang. H. (2025+), SLOPE and Designing Robust Studies for Generalization. <i>Under Review</i>. [arXiv]7. Miao, X., Zhao, J. and Kang. H. (2025+), Transfer Learning Between U.S. Presidential Elections: How Should We Learn from a 2020 Ad Campaign to Inform 2024 Ad Campaigns? <i>Under Revision</i>. [arXiv]6. Miao J.*, Miao X.*, Wu Y., Zhao J., Lu Q. (2025+). Assumption-Lean and Data-Adaptive Post-Prediction Inference. <i>Journal of Machine Learning Research</i>. [JMLR] [arXiv]5. Jiang, H.*, Miao, X.*, Thairu, M., Beebe, M., Grupe, D., Davidson, R.J., Handelsman, J., Sankaran, K. (2025+), multimedia: Multimodal Mediation Analysis of Microbiome Data. <i>Microbiology Spectrum</i>. [Microbiology Spectrum] [bioRxiv]4. Miao, J., Wu, Y., Sun, Z., Miao, X., Lu, T., Zhao, J., and Lu, Q., 2024. Valid Inference for Machine Learning-Assisted GWAS. <i>Nature Genetics</i>, 2361–2369. [Nature Genetics]3. Mao, L., Kim, K. and Miao, X., 2022. Sample Size Formula for General Win Ratio Analysis. <i>Biometrics</i>, 78(3), pp.1257-1268. [Biometrics] |
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2. Zheng, M., **Miao, X.** and Sankaran, K., 2022. Interactive Visualization and Representation Analysis Applied to Glacier Segmentation. *ISPRS International Journal of Geo-Information*, 11(8), p.415.
[ISPRS International Journal of Geo-Information]
 1. Hernando, D., Zhao, R., Yuan, Q., Aliyari Ghasabeh, M., Ruschke, S., **Miao, X.**, Karampinos, D.C., Mao, L., Harris, D.T., Mattison, R.J. and Jeng, M.R., Pedrosa, I., Kamel, I.R., Vasanawala, S., Yokoo, T. and Reeder, S.B. 2022. Multicenter Reproducibility of Liver Iron Quantification with 1.5-T and 3.0-T MRI. *Radiology*, p.213256.
[Radiology]
- * Co-first authors.

Honors & Awards

1. 2025 SLDS Best Student Paper Award
 - Awarded by Statistical Learning and Data Science (SLDS) Section, American Statistical Association
2. 2025 IMS Hannan Graduate Student Travel Award
 - Awarded by Institute of Mathematical Statistics (IMS)
3. 2025 NESS Student Research Award
 - Awarded by New England Statistics Symposium (NESS)
4. 2025 Morgridge Summer Fellowship
 - Awarded by Department of Statistics, University of Wisconsin-Madison
5. 2023-2024 Outstanding Teaching Assistant [Department News]
 - Awarded by Department of Statistics, University of Wisconsin-Madison
6. 2024 SCI Travel Scholarship
 - Awarded by Society for Causal Inference (SCI)

Teaching

Teaching Assistant at UW-Madison

- STAT 340: Data Science Modeling II. Spring 2026
Undergraduate course.
- STAT 992: Spectral Methods for Statistical Machine Learning. (Grader) Fall 2025
Graduate elective course.
- STAT 849: Advanced Statistical Methods. Fall 2025
Core Ph.D./M.S. course in regression and design.
- STAT 775: Bayesian Statistics. (Grader) Spring 2024
Graduate elective course.
- STAT 575: Statistical Methods for Spatial Data. Spring 2024
Upper-Level undergraduate and entry-level graduate course.
- STAT 849: Theory and Application of Regression and ANOVA I. Fall 2023
Core Ph.D./M.S. course in regression.

- STAT 301: Introduction to Statistical Methods.
Introductory undergraduate course. Fall 2021, Spring 2022, Summer 2024

Presentations

Seminars

- January 2026, Causal Working Group Seminar, John Hopkins University, Online
Robust transfer learning with sensitivity analysis
- December 2025, Department of Statistics, University of Florida, Gainesville, FL
Robust transfer learning with sensitivity analysis
- February 2025, Models, Experiments, and Data Workshop (MEAD), Department of Political Science, University of Wisconsin-Madison, Madison, WI
Transfer learning between U.S. presidential elections: how much can we learn from a 2020 ad campaign to inform 2024 ad campaigns?

Conference Presentations

- August 2025, Joint Statistical Meetings, Nashville, TN
Transfer learning between U.S. presidential elections: how much can we learn from a 2020 ad campaign to inform 2024 ad campaigns?
(SLDS Paper Award Session)
- June 2025, The 38th New England Statistics Symposium, New Haven, CT
Transfer learning between U.S. presidential elections: how much can we learn from a 2020 ad campaign to inform 2024 ad campaigns?
(Student Paper Competition Session)
- May 2025, American Causal Inference Conference, Detroit, MI
SLOPE and its role in design for generalization
(Invited Session)
- August 2024, Joint Statistical Meetings, Portland, OR
SLOPE: A Scalar Summary of Transportation Robustness
(Contributed Session)
- May 2024, American Causal Inference Conference, Seattle, WA
Transfer learning between U.S. presidential elections: how much can we learn from a 2020 ad campaign to inform 2024 ad campaigns?
(Plenary Session)
- March 2024, Eastern North American Region at Baltimore, MD
SLOPE: A Scalar Summary of Transportation Robustness
(Contributed Session)

Service

- Reviewer: Journal of Nonparametric Statistics, AISTATS (2023, 2025).
- Poster judge for American Causal Inference Conference (ACIC), 2025.