Qian Zhao

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Employment

Assistant Professor	Statistics, University of Massachusetts, Amherst	2024-Present
Postdoctoral Scholar	Biomedical Data Science, Stanford University	2022-2024

EDUCATION

Ph.D.	Statistics, Stanford University	2021
M.S.	Statistics, The University of Chicago	2016
B.S.	Physics, Fudan University, Shanghai, China	2014

RESEARCH INTERESTS

High-dimensional statistical inference, Statistical genetics, Nonparametric density estimation, Data science education, Precision medicine

PUBLICATIONS

Manuscript and preprints

1. Zhao, Q., Service, S., Bearde, C.E., Lopze-Jaramillo, C., Nelson, F. & Sabatti, C. , Mapping beyond diseases: Controlled variable selection for secondary phenotypes using tilted knockoffs, *arXiv 2508.18548*.
2. Sabatti, C. & **Zhao, Q.** (*To appear*) Near-peer mentoring in data science: Two experiences at Stanford University*, The American Statistician*.
3. Walther, G. & **Zhao, Q.** (*Under Review*) Beta-trees: Multivariate histograms with confidence statements, *arXiv 2308.00950*.

Peer reviewed articles

1. **Zhao, Q.** & Candès, E. (2025). An adaptively resized parametric bootstrap for inference in high-dimensional generalized linear models, *Statistics Sinica* 35.
2. **Zhao, Q**., Sur, P. & Candès, E. (2022). The asymptotic distribution of the MLE in high-dimensional logistic models: Arbitrary covariance. *Bernoulli* 28 (3).
3. Zhu, J., **Zhao, Q**., Katsevich, E. & Sabatti, C. (2019). Exploratory gene ontology analysis with interactive visualization. *Scientific Reports* 9, 7793.

4. Orlova, D.Y., Meehan, S., Parks, D., **Zhao, Q.** et al. (2018) QFMatch: Multidimensional flow and mass cytometry samples alignment. *Scientific Reports* 8, 3291.

PRESENTATIONS

1. **Zhao, Q.** & Gopalappa, C., "Integrating multilevel data to assess Massachusetts food vulnerability" (Presentation) *Joint Statistical Society Meeting*, Nashville, TN, 2025.
2. **Zhao, Q.,** Service, S., Bearde, C.E., Lopze-Jaramillo, C., Nelson, F. & Sabatti, C. "Mapping beyond diseases: Controlled variable selection for secondary phenotypes using tilted knockoffs" (Poster) *American Human Genetics Society Annual Meeting*, Denver, CO, 2024.
3. **Zhao Q.** & Guenther Walther. "Beta-Trees: Multivariate Histograms With Confidence Statements" (Presentation) *The 37th New England Statistics Symposium*, Storrs, CT, 2024.
4. **Zhao Q.** Service, S., Bearde, C.E., Lopze-Jaramillo, C., Nelson, F. & Sabatti, C. "Variable selection with a biased sample using tilted knockoffs" (Poster) *American Human Genetics Society Annual Meeting*, Denver, CO, 2024.
5. **Zhao, Q.,** "Controlled variable selection with a biased sample using tilted knockoff" (Presentation) *UMASS & UCONN Joint Statistics Seminar*, Storr, CT, 2024.
6. **Zhao, Q.** & Candès, E., "A resized parametric bootstrap method for inference of a high-dimensional generalized linear model" (Presentation) *7th International Conference on Econometrics and Statistics*, Beijing, China, 2024.
7. **Zhao, Q.,** "Inferring model parameters of a high-dimensional Generalized Linear Model, with application to genetic studies" (Presentation) *The 36th New England Statistics Symposium*, Boston, MA, 2023.
8. **Zhao, Q.,** "Co-creating learning experience with students in group data science projects" (Poster) *US Conference on Teaching Statistics*, State College, PA, 2023.
9. **Zhao, Q.**, "Selecting genetic variants using knockoffs under collider bias." (Presentation) *Stanford Causal Science Conference*, Stanford University, Stanford, CA, 2022.
10. **Zhao, Q.**, "Writing a reproducible manuscript in R." (Lightning talk) *Gear-up for Science Data Symposium*, Stanford University, Stanford, CA, 2022.
11. **Zhao, Q.**, Guthrie, E. & King, C. "Forecasting platelet blood bag demand to reduce inventory wastage at the Stanford Blood Center." (Presentation) *RStudio Conference*, San Francisco, CA, 2020.

TEACHING & MENTORING

Instructor, University of Massachusetts Amherst

STAT310 Fundamental Concepts of Statistics	Spring 2024, Fall 2024, Fall 2025
STAT690D Distribution-free methods in statistics	Spring 2025
Mentor, UMass Math and Stats Research Experiences for Undergraduates	Summer 2024

Technical Mentor, Data Science for Social Good, Stanford University Summer 2021, 2022

Teaching Assistant, Stanford University 2016-2021

Biostatistics Fall 2019, Winter 2021

Statistical methods in engineering and the physical sciences Spring 2018, Fall 2020

Introduction to statistical methods Summer 2020

Data science 101 Spring 2020

Riding the data wave Fall 2019

Introduction to statistical learning Winter 2019

Data mining and analysis Fall 2016, Summer 2017

Applied multivariate analysis Winter 2020

Advanced statistical theory Spring 2019

Modern applied statistics: Learning Winter 2019

Theory of statistics Spring 2018

AWARDS

Departmental Teaching Assistant Award June 2020

Department of Statistics, Stanford University

GRANTS

The Institute of Diversity Sciences Seed Grant Apr 2025

The Institute of Diversity Sciences, University of Massachusetts Amherst

MSP Flex Grant Feb 2025

Center for Teaching and Learning, University of Massachusetts Amherst

Teaching Advancement Grant Dec 2022

Center for Teaching and Learning, Stanford University

SERVICE & OUTREACH

Journal review

Annals of Statistics, Journal of Graphical and Computational Statistics, Information and Inference

Student paper committee

New England Statistics Symposium 2024, 2025

CAUSE Undergraduate Statistics Project Competition 2025

WNAR 2023 Annual Meeting 2023

ADVANCE Faculty fellow

University of Massachusetts Amherst 2024-2025

Justice, Equity, Diversity and Inclusion (JEDI) committee Postdoc representative

Stanford University, Department of Biomedical Data Science   2023

Stanford Future Advancers of Science and Technology (FAST) Mentor & Outcomes officer
Stanford University   2020-2023

Inclusive Mentoring in Data Science Workshop Mentor
Stanford University   Winter 2022, 2023

Stanford Women in Math Mentoring (SWIMM) Mentor
Stanford University   2017-2020

Ph.D. student social coordinator
Department of Statistics, Stanford University   2017