Hongru Zhao

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Research interests

Multivariate analysis, high-dimensional statistics, deep learning theory, statistical and machine learning, sequential analysis, distributed inference, random matrix theory, nonconvex minimization

Education

Ph.D. in Statistics (2025), University of Minnesota, Minneapolis, MN
M.S. in Mathematical Sciences (2020), University of Minnesota, Duluth, MN
B.S. in Statistics (2018), Jilin University, China

Research — Manuscripts submitted for publication

Li, X., and Zhao, H. (2024). Globally-Optimal Greedy Experiment Selection for Active Sequential Estimation. arXiv preprint arXiv:2402.08602.

Zhao, H., and Shen, X. (2024). Distributed Algorithms for High-Dimensional Statistical Inference and Structure Learning with Heterogeneous Data. Submitted, Journal of Machine Learning Research.

— Peer reviewed articles

Zhao, H., and Xu, J. (2024). Convergence Analysis and Trajectory Comparison of Gradient Descent for Overparameterized Deep Linear Networks. Transactions on Machine Learning Research.

Liu, K., Liu, Z., and Zhao, H. (2024). Exponential stability of the linear KdV-BBM equation. Discrete and Continuous Dynamical Systems-B, 29(3), 1206-1216.

Qi, Y., and Zhao, H. (2021). Limiting empirical spectral distribution for products of rectangular matrices. Journal of Mathematical Analysis and Applications, 502(2),125237.

— Select works in progress

Zhao, H., Molstad, A. J., and Rothman, A. J. Learning Association Structures via Subspace Decomposition in Multivariate Categorical Response Regression.

Invited presentations
— 2024

Poster Presentation, IRSA Conference
 — 2023

Seminar in Computer, Electrical and Mathematical Science and Engineering Division, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia

Professional service

— Reviewer

Annals of Applied Probability (1)

Courses taught

— UMN-TC: Graduate Instructor

Spring 2024: Regression and Statistical Computing
Fall   2023: Introduction to Statistical Analysis

— UMN-TC: Graduate Teaching Assistant

Fall   2022: STAT 5101 - Theory of Statistics I
Spring 2022: STAT 5102 - Theory of Statistics II
Fall   2021: STAT 3021 - Introduction to Probability and Statistics