

School of Statistics  
University of Minnesota  
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## Research interests

Generative model, diffusion model, high-dimensional statistics, deep learning theory, machine learning, sequential analysis, distributed inference, random matrix theory, nonconvex optimization

## Education

Ph.D. in Statistics (2025), University of Minnesota,  
Adviser: Adam J. Rothman  
M.S. in Mathematical Sciences (2020), University of Minnesota,  
B.S. in Statistics (2018), Jilin University, China

## Research — Publication and Preprint

Zhao, H., Molstad, A. J., and Rothman, A. J. (2024) Learning Association Structures via Subspace Decomposition in Multivariate Categorical Response Regression. Submitted, Annals of Statistics.

Li, X., and Zhao, H. (2024). Globally-Optimal Greedy Experiment Selection for Active Sequential Estimation. Submitted, IEEE Transactions on Information Theory.

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.

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.

## 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**

Transactions on Machine Learning Research

Annals of Applied Probability (1)

## **Courses taught**

### **— UMN-TC: Graduate Instructor**

Fall 2024: STAT 4101: Theory of Statistics I

Spring 2024: STAT 3301: Regression and Statistical Computing

Fall 2023: STAT 3011: 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