

BOBBY SHI

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rhshi.github.io

EDUCATION

UNIVERSITY OF TEXAS AT AUSTIN

2020 – 2026

Ph.D., Electrical and Computer Engineering

GPA: 3.96

Advised by Rachel Ward

UNIVERSITY OF CHICAGO

2016 – 2020

M.S., Computer Science

B.S., Mathematics

PUBLICATIONS

Preprints

1. Anming Gu, **Bobby Shi**, and Kevin Tian. Functional stochastic localization, 2026
2. **Bobby Shi**, Kevin Tian, and Matthew S. Zhang. Perspectives on stochastic localization, 2025
3. **Bobby Shi**, Julia Lindberg, and Joe Kileel. Efficient tensor decomposition via moment matrix extension, 2025.

Journal papers

4. Joe Neeman, **Bobby Shi**, and Rachel Ward. Concentration inequalities for sums of markov-dependent random matrices. *Information and Inference: A Journal of the IMA*, 13(4):iaae032, December 2024
5. Abolfazl Hashemi, Hayden Schaeffer, **Robert Shi**, Ufuk Topcu, Giang Tran, and Rachel Ward. Generalization bounds for sparse random feature expansions. *Applied and Computational Harmonic Analysis*, 2022.

Conference papers

6. Yuege Xie, **Bobby Shi**, Hayden Schaeffer, and Rachel Ward. Shrimp: Sparser random feature models via iterative magnitude pruning. In *Proceedings of the 3rd Mathematical and Scientific Machine Learning Conference*.

INVITED TALKS AND PRESENTATIONS

Efficient Tensor Decomposition

AMS Spring Western Sectional Meeting, *Boise State University*

2026

Data and Algebra Seminar, *University of Texas at Austin*

2025

Tensor Methods, *University of Texas at Austin*

2025

SIAM Conference Texas-Louisiana Section, *University of Texas at Austin*

2025

IMSI Statistics Meets Tensors, <i>University of Chicago</i>	2025
Joint Mathematics Meetings, <i>Seattle</i>	2025
SIAM Conference Texas-Louisiana Section, <i>Baylor University</i>	2024

Stochastic Localization

Mathematical Foundations of Generative AI, <i>University of Texas at Austin</i>	2025
Seminar, <i>University of Texas at Austin</i>	2025
Data, Optimization, and Sampling Seminar, <i>University of Texas at Austin</i>	2025

Concentration Inequalities for Markov Dependent Random Matrices

EnCORE's Fall 2025 Collaboration Workshop, <i>University of California, San Diego</i>	2025
SIAM Conference on Mathematics of Data Science, <i>Atlanta</i>	2024

SERVICE

Reviewer AISTATS (2024, 2025, 2026), Proceedings of the AMS, Journal of Optimization Theory and Applications, Statistica Sinica

Teaching and Mentorship Foundations of Machine Learning and Data Science (TA, Spring 2025, Spring 2023), Mathematics Directed Reading Program (Fall 2022, Summer 2023)

Organized the **Data, Optimization, and Sampling** seminar in the Fall of 2025

Served as **department Graduate Student Assembly representative** in the Fall of 2022 and Spring of 2023

HONORS AND AWARDS

Best Poster Award - <i>SIAM Conference Texas-Louisiana Section</i>	2025
Professional Development Award - <i>University of Texas at Austin</i>	2024
Engineering Fellowship - <i>University of Texas at Austin</i>	2020
Liew Family Research Grant - <i>University of Chicago</i>	2019
President's Scholar - <i>University of Chicago</i>	2016

TECHNICAL SKILLS

Python (PyTorch, TensorFlow, JAX), Julia, MATLAB, C, SQL, R