

BOBBY SHI

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rhshi.github.io

EMPLOYMENT

Simons Institute for the Theory of Computing

Postdoctoral Fellow

August 2026 – Present

Hosted by Peter Bartlett and Bin Yu

University of Texas at Austin

Postdoctoral Fellow

May 2026 – August 2026

Hosted by Rachel Ward

EDUCATION

University of Texas at Austin

Ph.D., Electrical and Computer Engineering

August 2020 – May 2026

Advised by Rachel Ward

University of Chicago

M.S., Computer Science

January 2019 – June 2020

B.S., Mathematics

September 2016 – June 2020

PUBLICATIONS

Preprints

1. **Bobby Shi**, Kevin Tian, and Matthew S. Zhang. Perspectives on stochastic localization, 2025.

Journal papers

2. **Bobby Shi**, Julia Lindberg, and Joe Kileel. Efficient tensor decomposition via moment matrix extension. *Journal of Symbolic Computation*, 2026.
3. 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.
4. 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

5. Anming Gu, **Bobby Shi**, and Kevin Tian. Functional stochastic localization. In *Proceedings of Thirty Ninth Conference on Learning Theory*, 2026.

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*, 2022.

INVITED TALKS AND PRESENTATIONS

Functional Stochastic Localization

Conference on Learning Theory, <i>San Diego</i>	2026
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

Efficient Tensor Decomposition

AMS Spring Western Sectional Meeting, <i>Boise State University</i>	2026
Data and Algebra Seminar, <i>University of Texas at Austin</i>	2025
Tensor Methods, <i>University of Texas at Austin</i>	2025
SIAM Conference Texas-Louisiana Section, <i>University of Texas at Austin</i>	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

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 SODA (2027), NeurIPS (2026), 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
Teaching Assistant (Spring 2023, Spring 2025), Mathematics Directed Reading Program Mentor (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