Jingchun Shao

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Education

Texas A&M University, Ph.D. in Mathematics — Aug 2025 – Present

- Interests: Numerical analysis, data science, and machine learning for high-dimensional scientific problems.
- **Advisor:** Simon Foucart

University of Chicago, M.S. in Computational and Applied Mathematics — Sep 2023 – May 2025

- **GPA:** 3.83/4.0
- **Coursework:** Machine Learning for PDEs, Machine Learning on Graphs & Manifolds, High-Dimensional Statistics, Fast Algorithms, Matrix Computation, Convex Optimization
- **Advisor:** Yuehaw Khoo

Hunan University, B.S. in Pure and Applied Mathematics — Sep 2019 – Jun 2023

- **Coursework:** Numerical Analysis, Object-Oriented Programming, Data Structures and Algorithms
- **Honors:** School-Level Scholarship (Top 10%), Mitacs Scholarship (Exchange at the University of Alberta)

Research Experience

Research Assistant, Texas A&M University — Advisor: Simon Foucart — Aug 2025 – Present

- **Autonomous materials discovery:** Develop compressive-sensing and optimal-recovery surrogates for costly simulations; benchmark against Bayesian optimization.

Research Assistant, University of Chicago — Advisor: Yuehaw Khoo — Sep 2023 – May 2025

- **Operator learning via SGMs:** Learned the Markov operator for the Ginzburg–Landau model with a score-based generative framework; $\sim$5% relative error on the second-moment estimate in a 64-dimensional setting.
- **QTT tensor recovery:** Developed an iterative recovery algorithm from Fourier sketches and proved an RIP bound for structured QTT classes; **manuscript in preparation.**

Research Intern, Chinese Academy of Sciences — Supervisor: Shihua Zhang — Jul 2021 – Jun 2022

- Studied machine-learning approaches to discovering and solving PDEs, with emphasis on physics-informed neural networks (PINNs).

Professional Experience and Leadership Activities

Quantitative Research Intern, Yanhe Fund – Shanghai, China — Jun 2022 – Aug 2022

- Applied Python, data processing, and feature engineering to extract predictive signals from large-scale stock datasets.
- Designed and validated a **machine learning–enhanced convertible bond strategy**, later deployed as a fund product.

Organizer, High-Dimensional Statistics Reading Group, University of Chicago — Jun 2024 – Aug 2024

- Organized and led a reading group on *High-Dimensional Statistics* (Wainwright).

Big Quantum Hackathon — 3rd Place (Technical Phase), Chicago — Sep 2023

- Formulated Boeing wing-ply stacking as a mixed-integer model and implemented relaxations on a CUDA Quantum platform.
- Recognized by Boeing engineers for manufacturability and weight-reduction potential.

Additional

Computer Skills: Python (PyTorch, SciPy), MATLAB, C++, Java, LaTeX

TOEFL: 111