TIANZE JIANG

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EDUCATION

Ph.D., Princeton University Operations Research and Financial Engineering **2024 - present**

Advisor: Boris Hanin.

M.A., Princeton University Operations Research and Financial Engineering (GPA: 4.0/4.0) **2024 - 2026**

Committee: Prof. Jianqing Fan, Prof. Boris Hanin, Prof. Jason Klusowski

B.S., Massachusetts Institute of Technology Double major in Math and Computer Science (GPA: 5.0/5.0) **2020 - 2024**

Selected Honors and Awards:

- Francis Robbins Upton Graduate Fellowship 2024
- William Lowell Putnam Math Competition, N1 (top 15 overall) 2021
- International Math Olympiad (IMO) Team USA (top place during team selection), Silver Medal 2020
- USA Math Olympiad (USAMO) winner, 5th place nationwide 2020
- Chinese International Math Olympiad (IMO) Team Candidate (top 15 overall) 2018

INDUSTRY EXPERIENCES

Research Scientist Intern, FAIR at Meta Superintelligence Labs, San Francisco, CA Jun. - Dec. 2026
Alignments: Theory and Optimization

Autoresearch agent and multi-agents communication. My project studies modelling the science of autoresearch and what role does multi-agents play.

Quantitative Research Intern, Citadel Securities, Miami, FL Jun. - Aug. 2024
FICC and Systematic Equities

Market impact accounting models of high-frequency trades on the US equities market. I constructed a model that predicts a particular trade's impact on market price in short horizon.

SELECTED RESEARCH EXPERIENCE

I work on scaling up deep networks and characterizing long horizon training dynamics using theoretical methods from math physics, statistics, and probability. In the past, I've also worked on information theory and average-case complexity theory.

1. [αβ]Boris Hanin, **TJ**, "*Bayesian Inference with Shaped Deep Non-linear MLPs.*" (2026) Paper.
2. [αβ]Boris Hanin, **TJ**, "*Universality of Singular Values in Products of Large Random Matrices.*" (2026) In: *Probability Theory and Related Fields.* Paper.
3. [12]**TJ**, Blake Bordelon, Cengiz Pehlevan, Boris Hanin, "*Hyperparameter Transfer with Mixture-of-Experts Layers.*" In: *Proc. 43rd Int. Conf. Machine Learning* (ICML 2026). Paper.
4. [αβ]Patrik Gerber, **TJ**, Yury Polyanskiy, Rui Sun, "*Density estimation using the perceptron.*" (2025) In: *Journal of Machine Learning Research* (JMLR). Paper.
5. [αβ]Yanjun Han, **TJ**, Yihong Wu, "*Prediction from compression for models with infinite memory.*" In: *Proc. Conf. on Learning Theory* (COLT 2024). Paper.
6. [αβ]Patrik Gerber, **TJ**, Yury Polyanskiy, Rui Sun, "*Kernel-based Tests for Likelihood-Free Hypothesis Testing.*" In: *Proc. 37th Adv. Neural Inf. Process. Systems* (NeurIPS 2023). Paper.
7. [αβ]Guy Bresler and **TJ**, "*Detection-Recovery and Detection-Refutation Gaps via Reductions from Planted Clique.*" In: *Proc. Conf. on Learning Theory* (COLT 2023). Paper.

***αβ=Alphabetically ordered authorship. All publications in this section are under (joint) first-authorship.**

OTHER EXPERIENCES

- **Reviewer**: IEEE Transactions on Information Theory; Algorithmic Learning Theory (ALT) 2024, 2025, 2026, 2027; ICLR 2026, 2027; ICML 2026 (*Gold Reviewer Award*); NeurIPS 2026; AAAI 2027
- **Teaching Assistant:** (SP26) ORF545 High Frequency Markets