TIANZE JIANG

EDUCATION

Bachelor of Science, Massachusetts Institute of Technology   **2020 - 2024**

Majors: Mathematics and Computer Science (Concentration: Economics)   **GPA: 5.0/5.0**

Selected Coursework (Advanced Graduate Level):

- 6.867 (Machine Learning), 6.864 (Advanced Natural Language Processing)

- 6.437 (Inference and Information), 6.438 (Algorithms for Inference), 6.840 (Theory of Computation),
  6.860 (Statistical Learning Theory), 6.251 (Mathematical Optimization), 6.875 (Cryptography & Cryptanalysis)

- 6.265 (Modern Discrete Probability), 18.656 (Math Stats: Non-Asymptotics), CS224 (Algorithms for Data Science)

- 18.675 (Probability Theory), 18.676 (Stochastic Calculus), 18.657 (Statistical Optimal Transport)

SELECTED RESEARCH

*Papers in this section are *all* under joint first-authorship ordered *alphabetically* unless they are not.*

1. Yanjun Han, **TJ**, Yihong Wu, "*Optimal Prediction Risk from Compression.*" In progress.

2. Patrik Gerber, **TJ**, Yury Polyanskiy, Rui Sun, "*Density Estimation via Random Halfspaces.*" (2023) Under revision. Draft.

3. Patrik Gerber, **TJ**, Yury Polyanskiy, Rui Sun, "*Kernel-based Tests for Likelihood-Free Hypothesis Testing.*" In: *Proc 37th Adv Neural Inf Process Syst (NeurIPS 2023)*, December 2023. Paper.

4. Guy Bresler and **TJ**, "*Detection-Recovery and Detection-Refutation Gaps via Reductions from Planted Clique.*" In: *Proc Conf on Learning Theory (COLT 2023)*, July 2023. Paper.

5. Quanlin Chen, **TJ**, Yuxiao Wang, "*On the Generational Behavior of Gaussian Binomial Coefficients at Roots of Unity*". MIT PRIMES (2020). Paper.

6. Sihui Zhang and **TJ**, "*A Note on Primitive Heronian Triangles*". In: *Chinese Ann. of Mathematics (2019)*. Paper.

HONORS AND AWARDS

- William Lowell Putnam Math Competition, N1 (Top 15th Overall)	2021
- International Math Olympiad (IMO) Team USA, Silver Medal	2020
- USA Math Olympiad (USAMO) winner, 5th place nationwide	2020
- Asian Pacific Math Olympiad, 3rd place worldwide	2020
- International Olympiad of Metropolises, Gold Medal (2nd place worldwide)	2018
- Chinese International Math Olympiad (IMO) Team Candidate (Top 15)	2018

SELECTED PRESENTATIONS

- Sampling via stochastic localization, Bresler Research Group, MIT	Nov. 2023
- Computational lower bounds via avg. case reductions, Chen Research Group, Harvard	Oct. 2023
- Slicing with random half-spaces, Pilanci Research Group, Stanford	Apr. 2023
- Likelihood-Free Inference with kernels, Polyanskiy Research Group, MIT	Dec. 2022

OTHER EXPERIENCES

- **Teaching Assistant**, 6.3700: Introduction to Probability.	SP2023
- **Teaching Assistant**, 6.7810: Algorithms for Inference (Approved Advanced Graduate Subject).	FA2022
- **Teaching Assistant**, Math Olympiad Program (MOP).	SU2021
- **Research Intern (Quant)**, Tong Deng Capital.	SU2021
- **Grader, Test Reviewer**, IMO (USA) Team Selection Tests.	2021

SKILLS

- **Programming**: Python (Pytorch, NumPy, Pandas), Assembly (RISC-V), HDL (Bluespec), Cpp, Julia.

- **Languages**: Native in English and Mandarin.