

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), 6.860 (Statistical Learning Theory), 6.251 (Mathematical Optimization), 6.875 (Cryptography & Cryptanalysis)
- 6.840 (Theory of Computation), 18.656 (Math Stats: Non-Asymptotics), CS224 (Algorithms for Data Science)
- 6.265 (Modern Discrete Probability), 18.675 (Probability Theory), 18.676 (Stochastic Calculus), 18.657 (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 from Compression.*” (2024+) Submitted.
2. Patrik Gerber, **TJ**, Yury Polyanskiy, Rui Sun, “*Density estimation using the perceptron.*” (2024+) Submitted. [Paper](#).
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

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|--|------|
| - 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

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| - 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

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| - 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.