Jikai Jin

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Education

- **ICME, Stanford University** — **Palo Alto, CA, USA**
  Ph.D. in computational mathematics — *2023 – 2028 (expected)*
- **School of Mathematical Sciences, Peking University** — **Beijing, China**
  B.S. in computational mathematics — *2019 – 2023 (expected)*
  Advisor: Prof. Liwei Wang.

Current Research interest

While being trained as a theorist, the ultimate goal of my research is to develop state-of-the-art solutions for important real-world problems.

- **Operations research:** experiment design and decision-making under uncertainty.
- **Statistics:** non-parametric and causal inference.
- **Social aspects of machine learning:** privacy, robustness and fairness.

Publications

(* denotes alphabetical ordering or equal contribution)

1. Bohang Zhang*, **Jikai Jin***, Cong Fang & Liwei Wang. ***Improved Analysis of Clipping Algorithms for Non-convex Optimization***, *33th Annual Conference on Neural Information Processing Systems (NeurIPS)*, 2020.
2. **Jikai Jin**. ***On The Convergence of First Order Methods for Quasar-Convex Optimization***, *12th Annual Workshop on Optimization for Machine Learning, arXiv preprint arXiv:2010.04937*.
3. **Jikai Jin***, Bohang Zhang*, Haiyang Wang & Liwei Wang. ***Non-convex Distributionally Robust Optimization: Non-asymptotic Analysis***, *34th Annual Conference on Neural Information Processing Systems (NeurIPS)*, 2021.
4. **Jikai Jin** & Suvrit Sra. ***Understanding Riemannian Acceleration via a Proximal Extragradient Framework***, *35th Annual Conference on Learning Theory (COLT)*, 2022.
5. Binghui Li*, **Jikai Jin***, Han Zhong, John E. Hopcroft & Liwei Wang. ***Why Robust Generalization in Deep Learning is Difficult: Perspective of Expressive Power***, *35th Annual Conference on Neural Information Processing Systems (NeurIPS)*, 2022.
6. **Jikai Jin**, Yiping Lu, Jose Blanchet & Lexing Ying. ***Minimax Optimal Kernel Operator Learning via Multilevel Training***, *The Eleventh International Conference on Learning Representations (ICLR), 2023* (***spotlight***). *Preliminary version appeared in the NeurIPS 2022 workshop on AI for Science.*
7. **Jikai Jin**, Zhiyuan Li, Kaifeng Lyu, Simon S. Du & Jason D. Lee. ***Understanding Incremental Learning of Gradient Descent: Fine-grained analysis of Matrix Sensing***, *ArXiv preprint arXiv:2301.11500, to appear in the 40th International Conference on Machine Learning (ICML)*, 2023.

Invited Talks

Minimax Optimal Kernel Operator Learning
ICLR 2023 (Kigali, Rwanda) 2023.05

Elite Undergraduate Training Program Seminar (Peking University) 2023.05
Incremental Learning of Gradient Descent
Prof. Rong Ge's group (Duke University) 2023.03
ICML 2023 (Hawaii, USA) 2023.07
2023 INFORMS Annual Meeting (Phoenix, AZ, USA) 2023.10

Honors and Awards

2016: Second Prize , Chinese Mathematical Olympiad (CMO)

2017: First Prize (ranked No.13) , Chinese Mathematical Olympiad (CMO)

2018: First Prize (ranked No.6) , Chinese Mathematical Olympiad (CMO)

2018: Gold Medal (mathematics individual) and First Place (as a member of the Shanghai team), the 2nd International Olympiad of Metropolises

2019: Silver Medal, 11th Romania Masters of Mathematics (RMM)

2020: Yizheng Scholarship, Peking University

2020: Qin Wanshun-Jin Yunhui Scholarship, Peking University

2021: Bronze Medal, S.T. Yau College Student Mathematics Contest (Probability & Statistics individual)

2021: Peking University Exceptional Award for Academic Innovation (**Top 1% of PKU student researchers**)

2022: Merit Student, Peking University

2022: Qin Wanshun-Jin Yunhui Scholarship, Peking University

2023: Sensetime Scholarship (**Awarded to 30 Chinese undergraduate students in the field of AI**)

2023: Peking University Excellent Graduate

2023: Huaixin Scholar, Peking University (**Top 5% of PKU graduates**)

2021 – 2023: The elite undergraduate training program of Applied Mathematics and Statistics

Language

Native: Chinese (Mandarin), Shanghainese

Fluent: English