Jikai Jin

Curriculum Vitae

Education

Department of Information and Computational Sciences **Beijing, China**
School of Mathematical Sciences, Peking University
B.S. in Computational Mathematics GPA: 3.834/4.0 ranking: 6/48 *Sept 2019 –*
Selected courses: Mathematical Analysis 94.33 (1-3 average), Advanced Algebra 99 (1-2 average), Probability Theory 100, Introduction to Computation 100, Function of Real Variables 90, Functional Analysis 90.5, Numerical Algebra 90, Data Structure and Algorithms 94, Mathematical Methods in Finance 100, Asymptotic Statistics 96, Computational Statistics 91, JAVA Programming 93.

Research Experience

◇ **School EECS, Peking University** **Beijing, China**
Research Intern, advised by Prof. Liwei Wang *Feb 2020 –*
Work on optimization for machine learning (with a focus on adaptive methods) and expressive power of neural networks.

◇ **LIDS, MIT** **online**
Summer Research Intern, advised by Prof. Suvrit Sra *July 2021 – September 2021*
Work on theoretical analysis of accelerated optimization methods on Riemann manifolds.

◇ **Department of ECE, Princeton University** **online**
Research Intern, advised by Prof. Jason D. Lee *January 2022 –*
Work on implicit low-rank bias of gradient flow for matrix factorization and deep linear networks.

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***, *To appear in COLT 2022, arXiv preprint arXiv:2111.02763*.

(086)-139-0162-1152 • jkjin@pku.edu.cn

5. Binghui Li*, **Jikai Jin***, Han Zhong, John E. Hopcroft, Liwei Wang. ***Why Robust Generalization in Deep Learning is Difficult: Perspective of Expressive Power***, *submitted, arXiv preprint arXiv:2205.13863*.

Honors & Awards

2021	Peking University Exceptional Award for Academic Innovation
2021 – 2023 (expected)	The elite undergraduate training program of Applied Mathematics and Statistics
2021	Bronze Medal, S.T. Yau College Student Mathematics Contest, Probability & Statistics, individual
2021	Qin-Jin Scholarship, Peking University
2020	Yizheng Scholarship, Peking University
2019	Silver Medal, 11th Romania Masters of Mathematics (RMM)
2018	First Prize (rank No.6) , Chinese Mathematical Olympiad
2018	Gold Medal (mathematics individual) and First Place (as a member of the Shanghai team), the 2nd International Olympiad of Metropolises (IOM)
2017	First Prize (rank No.13) , Chinese Mathematical Olympiad
2017	Gold Medal, the 4th Iranian Geometry Olympiad (advanced level)
2016	Second Prize , Chinese Mathematical Olympiad

Standardized Tests

TOEFL	Reading 29, Listening 29, Speaking 26, Writing 29, Total 113	*Dec. 2021*
GRE math	Scaled score 970, ranking 97%	*Oct. 2021*
IELTS	Listening 7.5, Reading 8.5, Writing 7.0, Speaking 6.0, Total 7.5	*Sept. 2021*
GRE General	Verbal 170, Quantitative 170, Writing 4.0	*June 2019*