

Zijian Liu

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Zijian Liu

Education

- Sept. 2022 **Department of Technology, Operations, and Statistics at Stern School of Business, New York University, NY**
– May 2026 (Expected) Ph.D. Candidate in Operations Management, advisor: Zhengyuan Zhou
- Sept. 2019 **Courant Institute of Mathematical Sciences, New York University, NY**
– May 2021 M.S. in Computer Science
- Sept. 2015 **School of Computer Science, Wuhan University, Wuhan, China**
– June 2019 B.Eng. in Software Engineering

Research Interests

Mathematical Optimization, Theoretical Machine Learning

Publications & Manuscripts

(* indicates equal contribution, † indicates alphabetical order)

- ICML 2025 **Improved Last-Iterate Convergence of Shuffling Gradient Methods for Nonsmooth Convex Optimization** [[Link](#)]
Zijian Liu, Zhengyuan Zhou
- ICLR 2025 **Nonconvex Stochastic Optimization under Heavy-Tailed Noises: Optimal Convergence without Gradient Clipping** [[Link](#)]
Zijian Liu, Zhengyuan Zhou
- ICML 2024 **On the Last-Iterate Convergence of Shuffling Gradient Methods** [[Link](#)]
(Oral) Zijian Liu, Zhengyuan Zhou
- ICML 2024 **On the Convergence of Projected Bures-Wasserstein Gradient Descent under Euclidean Strong Convexity** [[Link](#)]
Junyi Fan*, Yuxuan Han*, Zijian Liu, Jian-Feng Cai, Yang Wang, Zhengyuan Zhou
- ICLR 2024 **Revisiting the Last-Iterate Convergence of Stochastic Gradient Methods** [[Link](#)]
Zijian Liu, Zhengyuan Zhou
- COLT 2023 **Breaking the Lower Bound with (Little) Structure: Acceleration in Non-Convex Stochastic Optimization with Heavy-Tailed Noise** [[Link](#)]
Zijian Liu, Jiawei Zhang, Zhengyuan Zhou
- ICML 2023 **High Probability Convergence of Stochastic Gradient Methods** [[Link](#)]
Zijian Liu*, Ta Duy Nguyen*, Thien Hang Nguyen*, Alina Ene, Huy L. Nguyen
- ICLR 2023 **On the Convergence of AdaGrad(Norm) on \mathbb{R}^d : Beyond Convexity, Non-Asymptotic Rate and Acceleration** [[Link](#)]
Zijian Liu*, Ta Duy Nguyen*, Alina Ene, Huy L. Nguyen
- ICML 2022 **Adaptive Accelerated (Extra-)Gradient Methods with Variance Reduction** [[Link](#)]
Zijian Liu*, Ta Duy Nguyen*, Alina Ene, Huy L. Nguyen
- ICML 2022 **Distributionally Robust Q-Learning** [[Link](#)]
Zijian Liu, Qinrun Bai, Jose Blanchet, Perry Dong, Wei Xu, Zhengqing Zhou, Zhengyuan Zhou

Operations Research Major Revision	Product Return as a Sequence of Search Processes: Optimality and Search Duration [Available upon request] Xiaoyu Fan [†] , Srikanth Jagabathula [†] , Zijian Liu [†] , Eitan Muller [†]
In Submission	Online Convex Optimization with Heavy Tails: Old Algorithms, New Regrets, and Applications [Link] Zijian Liu
In Submission	Clipped Gradient Methods for Nonsmooth Convex Optimization under Heavy-Tailed Noise: A Refined Analysis [Available upon request] Zijian Liu
Manuscript	Near-Optimal Non-Convex Stochastic Optimization under Generalized Smoothness [Link] Zijian Liu, Srikanth Jagabathula, Zhengyuan Zhou
Manuscript	Stochastic Nonsmooth Convex Optimization with Heavy-Tailed Noises: High-Probability Bound, In-Expectation Rate and Initial Distance Adaptation [Link] Zijian Liu, Zhengyuan Zhou
Manuscript	META-STORM: Generalized Fully-Adaptive Variance Reduced SGD for Unbounded Functions [Link] Zijian Liu*, Ta Duy Nguyen*, Thien Hang Nguyen*, Alina Ene, Huy L. Nguyen

Invited Talks

- Jul. 2024 *The 25th International Symposium on Mathematical Programming*
 Jul. 2024 *The 41st International Conference on Machine Learning*

Services

Journal Reviewer	<i>IEEE Journal on Selected Areas in Information Theory (JSAIT)</i> <i>IEEE Transactions on Automatic Control (TAC)</i> <i>IEEE Transactions on Control Systems Technology (TCST)</i> <i>Journal of Machine Learning Research (JMLR)</i> <i>Management Science</i> <i>Mathematical Finance</i> <i>SIAM Journal on Optimization (SIOPT)</i> <i>Statistica Sinica</i>
Conference Reviewer	<i>ICML 2022, 2024, 2025</i> <i>NeurIPS 2024, 2025</i> <i>ICLR 2025</i> <i>ALT 2025</i>
Organizer	<i>MOILS seminar (internal seminar series at NYU Stern) Spring 2023</i>

Teaching Experience

Summer 2025	Operations Management , Instructor Class Size: 15 <ul style="list-style-type: none"> <input type="radio"/> Teach regular class <input type="radio"/> Grade assignments and exams and hold office hours 	New York University
Fall 2024	Operations Management , Teaching Fellow Instructor: Prof. Divya Singhvi <ul style="list-style-type: none"> <input type="radio"/> Grade assignments and exams and hold office hours 	New York University

Summer 2024	Stochastic Modeling & Simulation , Teaching Fellow Instructor: Prof. Joshua Reed <ul style="list-style-type: none">○ Grade assignments and exams and hold office hours	New York University
Fall 2020	Bayesian Machine Learning , Section Leader Instructor: Prof. Andrew Gordon Wilson <ul style="list-style-type: none">○ Teach supplementary materials and advanced topics in recitation○ Grade assignments and exams and hold office hours	New York University