Ziyang Wei

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Education

Ph.D. in Statistics 2022 – now
Department of Statistics, University of Chicago, Chicago, USA

M.Sc. in Statistics 2020 – 2022
Department of Statistics, University of Chicago, Chicago, USA

B.Sc. in Mathematics and Applied Mathematics 2016 – 2020
School of Mathematical Sciences, Fudan University, Shanghai, China

Research

Job Market Paper

11. **Ziyang Wei**, Jiaqi Li, Lan Wang, and Wei Biao Wu. Finite-sample distribution theory and efficient large-scale inference for online quantile regression. *Journal of the American Statistical Association (Theory and Methods)*, under review.

Publications

10. **Ziyang Wei**, Jiaqi Li, Likai Chen, and Wei Biao Wu. Central limit theorems for stochastic gradient descent quantile estimators. *IEEE Transactions on Information Theory*, 2026.
9. **Ziyang Wei**, Wanrong Zhu, Jingyang Lyu, and Wei Biao Wu. Refining covariance matrix estimation in stochastic gradient descent through bias reduction. *International Conference on Artificial Intelligence and Statistics*, 2026.
8. **Ziyang Wei**, Wanrong Zhu, and Wei Biao Wu. General weighted averaging in stochastic gradient descent: CLT and adaptive optimality. *International Conference on Artificial Intelligence and Statistics*, 2026.
7. **Ziyang Wei**, Jiaqi Li, Zhipeng Lou, and Wei Biao Wu. Gaussian approximation and concentration of constant learning-rate stochastic gradient descent. *Advances in Neural Information Processing Systems*, 2025.
6. Or Goldreich, **Ziyang Wei**, Soham Bonnerjee, Jiaqi Li, and Wei Biao Wu. Asymptotic theory of SGD with a general learning-rate. *Advances in Neural Information Processing Systems*, 2025.
5. **Ziyang Wei** and Shuqin Zhang. CALLR: a semi-supervised cell-type annotation method for single-cell RNA sequencing data. *Bioinformatics*, 2021. (Oral presentation at ISMB/ECCB 2021)

Selected Manuscripts and Research in Progress

4. Wanrong Zhu, Zhipeng Lou, **Ziyang Wei**, and Wei Biao Wu. High confidence level inference is almost free using parallel stochastic optimization. *Journal of Machine Learning Research*, revision submitted.
3. Xiaoli Li, Qianqian Lei, **Ziyang Wei**, and Wei Biao Wu. Exact tail laws for nonlinear SGD with infinite-variance gradients. *Submitted*.
2. Junyu Chen, Weining Wang, **Ziyang Wei**, and Wei Biao Wu. Attention to quantiles: Statistical theory for regularized SGD. *Submitted*.

1. **Ziyang Wei**, José R. Zubizarreta, and Junwei Lu. Uniform confidence bands for continuous treatment effects with nonparametric caliper weighting. *Working paper*.

Teaching

Teaching Assistant

- STAT 25100: Introduction to Mathematical Probability, Winter 2023, Winter 2026
- STAT 23400: Statistical Models and Methods, Spring 2023, Autumn 2023, Autumn 2024
- STAT 22200: Linear Models and Experimental Design, Spring 2024
- STAT 32950/24620, FINM 34700: Multivariate Statistical Analysis: Applications and Techniques, Spring 2025
- STAT 25150: Introduction to Mathematical Probability-A, Spring 2026
- STAT 22000: Statistical Methods and Applications, Autumn 2026

Awards

Best Statistical Consulting Team Award
Department of Statistics, University of Chicago, 2024 – 2025

Ph.D. Program Fellowship
University of Chicago, 2022 – 2027

Merit-Based Scholarship for Graduate Students
University of Chicago, 2020 – 2022

Outstanding Graduate
Fudan University, 2020

Top-notch Talent Program Honored Graduate
Fudan University, 2020

Outstanding Student
Fudan University, 2018 – 2019

Experience

Statistical Consultant 2020 – 2025
Department of Statistics, University of Chicago, Chicago, USA

Summer Research Intern 2019
Department of Biostatistics, Harvard T.H. Chan School of Public Health, Boston, USA