Wei Guo

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About me

I am now a second-year Machine Learning Ph.D. student at Georgia Tech, broadly interested in fields ranging from statistics, probability, and machine learning.

The focus and goal of my research are two-fold: to reveal the fundamental principles behind the success of data-driven algorithms and to use these insights to develop accessible, efficient, and robust approaches for solving real-world problems that are essential and valuable for our society.

Research Interests

- **Statistics**: Sampling (Markov Chain Monte Carlo), Optimization, Computational Statistics, Theoretical Machine Learning, Bayesian Inference.
- **Probability**: Optimal Transport, Applied Stochastic Analysis.
- **Machine Learning**: Generative Modeling, Large Language and Vision Models.

Education

B.S.   **Peking University**, School of Mathematical Sciences   Sep 2019 – Jul 2023
- **Major**: Statistics.
- **GPA**: 3.848/4.0; rank: 5/44.
- **Advisor**: Professor Cheng Zhang ↗.
- **Selected coursework:** Mathematical Statistics (Honor) [95], Statistical Models and Computing Methods [94.8], Functions of Real Variables [100], Functional Analysis [98], Measure Theory [96], Learning by research [98].
- **Awards**: merit student in the academic year of 2019-2020; merit student pacesetter in the academic year of 2020-2021; merit student in the academic year of 2021-2022; 2023 Beijing Outstanding Undergraduate Graduate Award.

Ph.D.   **Georgia Institute of Technology**, Machine Learning Center   Aug 2023 –
- **Advisor**: Professor Yongxin Chen ↗.

Preprints and Publications

Plug-and-Play Controllable Generation for Discrete Masked Models   Oct 2024
Wei Guo, Yuchen Zhu, Molei Tao, Yongxin Chen
arxiv:2410.02143 ↗

Provable Benefit of Annealed Langevin Monte Carlo for Non-log-concave Sampling   Jul 2024
Wei Guo, Molei Tao, Yongxin Chen
arxiv:2407.16936 ↗

Technical Skills

Mathematics and Statistics: Markov chain Monte Carlo, optimization, stochastic analysis, optimal transport, computational statistics, applied partial differential equations.

Machine learning: computer vision, natural language processing.

Coding: proficient programming in python.

Languages: Chinese (Mandarin and Wu dialect, native), English (proficient), French (beginner).