WEI GUO

Email: wei.guo@gatech.edu
Personal website: alexandreguo2001.github.io
Google Scholar ◇ Semantic Scholar ◇ Github ◇ LinkedIn

EDUCATION

Georgia Institute of Technology, Machine Learning Center *Aug 2023 – Present*
Ph.D. in Machine Learning
Advisor: Professors Yongxin Chen and Molei Tao

Peking University, School of Mathematical Sciences *Sep 2019 – Jul 2023*
B.S. in Statistics
GPA: 3.848/4.0; **Rank**: 5/44
Advisor: Professor Cheng Zhang

RESEARCH INTERESTS

- **Statistics and Probability**: Theoretical analysis and practical design of sampling algorithms (Markov chain Monte Carlo, non-equilibrium (e.g., denoising diffusion, stochastic localization) sampling, or learning-based neural samplers); Applied stochastic analysis with applications to optimal transport, stochastic optimal control, and statistical physics.
- **Machine Learning**: Generative modeling, with a particular focus on (continuous/discrete) diffusion and flow-based models and with applications to vision, language, and sciences.

PREPRINTS AND PUBLICATIONS

(In reversed chronological order. * denotes equal contribution or alphabetical order.)

[1] Wei Guo*, Jaemoo Choi*, Yuchen Zhu, Molei Tao, and Yongxin Chen. "Proximal Diffusion Neural Sampler". In: *The Fourteenth International Conference on Learning Representations*. 2026. URL: https://openreview.net/forum?id=XTHQqS7ObC.

[2] Wei Guo, Molei Tao, and Yongxin Chen. "Complexity Analysis of Normalizing Constant Estimation: from Jarzynski Equality to Annealed Importance Sampling and beyond". In: *The Fourteenth International Conference on Learning Representations*. 2026. URL: https://openreview.net/forum?id=96fJALwotm.

[3] Wei Guo, Molei Tao, and Yongxin Chen. "Provable Benefit of Annealed Langevin Monte Carlo for Non-log-concave Sampling". In: *The Thirteenth International Conference on Learning Representations*. 2025. URL: https://openreview.net/forum?id=P6IVIoGRRg.

[4] Yinuo Ren*, Haoxuan Chen*, Yuchen Zhu*, Wei Guo*, Yongxin Chen, Grant M Rotskoff, Molei Tao, and Lexing Ying. "Fast Solvers for Discrete Diffusion Models: Theory and Applications of High-Order Algorithms". In: *The Thirty-ninth Annual Conference on Neural Information Processing Systems*. 2025. URL: https://openreview.net/forum?id=OuklL6Q3sO.

[5] Yuchen Zhu*, Wei Guo*, Jaemoo Choi, Guan-Horng Liu, Yongxin Chen, and Molei Tao. "MDNS: Masked Diffusion Neural Sampler via Stochastic Optimal Control". In: *The Thirty-ninth Annual Conference on Neural Information Processing Systems*. 2025. URL: https://openreview.net/forum?id=xIH95kXNR2.

[6] Yuchen Zhu*, Wei Guo*, Jaemoo Choi, Petr Molodyk, Bo Yuan, Molei Tao, and Yongxin Chen. "Enhancing Reasoning for Diffusion LLMs via Distribution Matching Policy Optimization". In: *arXiv preprint arXiv:2510.08233* (2025).

[7] Wei Guo*, Yuchen Zhu*, Molei Tao, and Yongxin Chen. "Plug-and-play controllable generation for discrete masked models". In: *arXiv preprint arXiv:2410.02143* (2024).

Teaching Experience

- Served (or currently serving) as a teaching assistant for the following courses at Georgia Tech:

AE 3531: Control System Analysis and Design. Lecturer: Lu Gan. *Fall 2024*
AE 8803: Optimal Transport Theory and Applications. Lecturer: Yongxin Chen. *Spring 2025*
AE 3530: System Dynamics and Vibration. Lecturer: Yongxin Chen. *Fall 2025*
AE 8803: Applied Stochastic Control and Generative Modelling. Lecturer: Yongxin Chen. *Spring 2026*

Community Service

(Numbers in parentheses indicate the number of papers reviewed.)

- Served as a reviewer for the following conferences:

  ICLR 2024 (1), ICLR 2025 (3), NeurIPS 2025 (5), ICLR 2026 (6).

- Served as a reviewer for the following journals:

  IEEE Transactions on Information Theory (1), Transactions on Machine Learning Research (1).

Awards

PKU merit student in the academic year of 2019-2020 *Oct 2020*
PKU merit student pacesetter in the academic year of 2020-2021 *Oct 2021*
PKU merit student in the academic year of 2021-2022 *Oct 2022*
2023 Beijing Outstanding Undergraduate Graduate Award *Jul 2023*
Best poster award at Yale FDS conference "Recent Advances and Future Directions for Sampling" *Oct 2024*

Technical Skills

- **Mathematics and Statistics**: Markov chain Monte Carlo, convex optimization, stochastic analysis, optimal transport, applied partial differential equations.
- **Machine learning**: computer vision, natural language processing.
- **Programming**: proficient programming in Python (including PyTorch).
- **Languages**: Chinese (Mandarin and Wu dialect, native), English (proficient), French (beginner).