Anming Gu

CONTACT INFORMATION
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anminggu.github.io

RESEARCH INTERESTS
optimal transport, sampling and optimization, differential privacy, robust statistics, machine learning theory, theoretical computer science, probability theory

EDUCATION

The University of Texas at Austin — Austin, TX
Ph.D. in Computer Science — 2025 – 2030
Advised by Kevin Tian

Boston University — Boston, MA
B.A. in Computer Science, Minor in Mathematics — 2020 – 2024
GPA: 3.97/4.0 (*summa cum laude*)
Honors in Major (Thesis with defense)
Thesis: *Latent Trajectory Inference with Drift Prior* (slides)

HONORS AND AWARDS

BU, CS Convocation Student Speaker (video) — 2024
BU, Department of CS College Prize — 2024
Undergraduate Research Opportunity Program (UROP) funding — 2021

PUBLICATIONS

$(\alpha\beta)$ denotes alphabetical, * denotes equal contribution]

[5] **A. Gu**, E. Chien, K. Greenewald. *Private Continuous-Time Synthetic Data Generation via Mean-Field Langevin Dynamics*. Under review. [arXiv]

[4] **A. Gu***, J. Kim*. *Mirror Mean-Field Langevin Dynamics*. Under review. [arXiv]

[3] M. A. Finzi, S. Kapoor, D. Granziol, **A. Gu**, C. De Sa, J. Z. Kolter, A. G. Wilson. *Compute-Optimal LLMs Provably Generalize Better with Scale*. International Conference on Learning Representations 2025. [arXiv]

[2] **A. Gu**, E. Chien, K. Greenewald. *Partially Observed Trajectory Inference using Optimal Transport and a Dynamics Prior*. International Conference on Learning Representations 2025. [arXiv] Preliminary version in OPT Workshop on Optimization for Machine Learning 2024.

[1] K. Greenewald, **A. Gu**, M. Yurochkin, J. Solomon, E. Chien. k*-Mixup Regularization for Deep Learning via Optimal Transport*. Transactions on Machine Learning Research 2023. [arXiv]

RESEARCH EXPERIENCE

Chien Lab, Boston University — Boston, MA
Research Assistant — Sept 2020 – May 2025

- Working on optimal transport for machine learning with Ed Chien, Assistant Professor @ BU and Kristjan Greenewald, Research Scientist @ MIT-IBM Watson AI Lab.

TALKS

k-Mixup Regularization for Deep Learning via Optimal Transport
Boston University SIAM — March 2023

TEACHING EXPERIENCE

Boston University, Department of Computer Science — Boston, MA

- CS565: Algorithmic Data Mining — S25
- CS330: Analysis of Algorithms — S22, F24, S25

- CS235: Algebraic Algorithms F24
- CS332: Theory of Computation S24
- CS320: Concepts of Programming Languages F23

EMPLOYMENT

Boston University, Department of Computer Science Boston, MA
Post-Bacc Academic Fellow Sept 2024 – May 2025

Amazon Sunnyvale, CA
Software Development Engineer Intern Summer 2023

Capital One McLean, VA
Software Engineer Intern Summer 2022

SERVICE

Reviewer: ICLR 2025, NeurIPS 2025

MENTORING

Sasidhar Kunapuli (high school) Oct 2024 – May 2025

SKILLS

- **Languages**: Python, C/C++, OCaml, Java, Bash, MATLAB
- **Technologies**: PyTorch, TensorFlow, Pandas, Jupyter Notebook
- **Other**: Linux, Git/Github, LaTeX, Make

PHD COURSEWORK

- **Theory**: Complexity Theory, Mathematical Methods for Theoretical Computer Science, Privacy in Statistics and ML (audit)
- **ML/AI**: Machine Learning, Artificial Intelligence, Deep Learning, Mathematics of Deep Learning
- **Mathematics**: Functional Analysis, PDEs, Stochastic PDEs, Stochastic Calculus
- **Other**: Functional Compilers, Geometry Processing, Financial Econometrics

REFERENCES

Available upon request