Miao Li

PhD Student, Georgia Institute of Technology
mli746@gatech.edu | Google Scholar Profile

Education

Georgia Institute of Technology Atlanta, GA
Ph.D. in Industrial & Systems Engineering (Machine Learning Track) Aug. 2023 – May 2027 (expected)

University of Chicago Chicago, IL
M.S. in Computational and Applied Mathematics 2021

University of California, San Diego La Jolla, CA
B.S. in Mathematics (Probability & Statistics) 2018

Honors & Awards

- **George Nemhauser Fellowship** (Georgia Tech)

Publications & Preprints

*Selected works. * indicates equal contribution.*

1. T.H. Hoang, J. Fuhrman, M. Klarqvist, **M. Li**, et al. "Enabling end-to-end secure federated learning in biomedical research on heterogeneous computing environments with APPFLx." **Computational and Structural Biotechnology Journal, Vol 28, 2025.**

2. **M. Li**, M. Klamkin, P. Van Hentenryck, R. Bent, W. Li. "Constraint-Informed Active Learning for End-to-End ACOPF Optimization Proxies." *Under Review at* **Power Systems Computation Conference 2026**.

3. **M. Li**, M. Klamkin, P. Van Hentenryck. "Conformal Prediction with Upper and Lower Bound Models." *Resubmission to* **ICML** 2026.

4. **M. Li**, S. Na, M. Kolar. "A Theoretically Sound Sequential Quadratic Programming Algorithm on Riemannian Manifolds." *Preprint, available upon request.*

Works in Progress

1. H.Jiang*, **M. Li***, et al. "Lightweight Inference-Time Trajectory Optimization for Diffusion Language Models."

   Developing a training-free framework for controlling generation trajectories in diffusion-based LLMs. Manuscript expected Dec 2025.

2. **M. Li**, H.Jiang, P. Van Hentenryck, et al. "Agentic LLM Orchestration for Real-Time Hybrid Optimization."

   Investigating the robust integration of neural proxies with commercial solvers using data-driven logic to minimize computational cost.

Research Experience

Argonne National Laboratory Lemont, IL
Research Intern (Mathematics and Computer Science Division) *Oct. 2022 – Aug. 2023*

- Developed `APPFLx`, a secure federated learning framework for biomedical research, enabling privacy-preserving training across heterogeneous computing environments.
- Investigated gradient inversion attacks on biomedical images to strengthen privacy protocols against adversarial reconstruction.
- Advisors: Mihai Anitescu

University of Chicago, Booth School of Business Chicago, IL
Research Assistant *July 2021 – Sept. 2022*

- Conducted theoretical analysis on Sequential Quadratic Programming (SQP) algorithms for optimization on Riemannian manifolds.
- Advisors: Mladen Kolar

Northeast Securities   Shanghai, China
Quant Internship   *Nov. 2018 – Aug. 2019*
- Tested and validated multi-factor models for quantitative investment strategies.

Teaching Experience

- **Teaching Assistant**, UC San Diego (2016 – 2018): Game Theory, Calculus I/II, Intro to Analysis, Nonlinear Dynamics.

Technical Skills

Languages: Python (PyTorch, GurobiPy), R, MATLAB
Tools: Git, LaTeX, High-Performance Computing (HPC) Clusters