

YANJUN LIU

Ph.D. Candidate, Department of Operations Research and Financial Engineering, Princeton University
Sherrerd Hall, Princeton, NJ 08544 | yanjun.liu@princeton.edu | yanjunliu-regina.github.io

EDUCATION

Princeton University <i>Ph.D. in Operations Research and Financial Engineering</i> GPA: 3.97/4.00 Advisors: Prof. Amir Ali Ahmadi and Prof. Bartolomeo Stellato	Princeton, NJ Aug 2023 – May 2028 (expected)
Australian National University (ANU) <i>Bachelor of Mathematical Sciences (First Class Honors)</i> GPA: 7.0/7.0 Advisor: Prof. Qinian Jin Honors thesis: Momentum Acceleration Technique and Its Application in Large-scale Optimization	Canberra, Australia Feb 2020 – Jul 2023

RESEARCH INTERESTS

- Computer-aided framework for algorithm analysis and design.
- Accelerated and adaptive methods for convex and minimax optimization.
- Derivative-free optimization for noisy or expensive black-box objectives.

RESEARCH EXPERIENCE

Department of Mathematics, University of California, Los Angeles (UCLA) <i>Visiting Graduate Scholar</i> Supervisor: Prof. Ernest K. Ryu Project: Moving-anchor adaptive accelerated extragradient methods for minimax optimization [S1]	Los Angeles, CA Jun 2026 – Jul 2026
Mathematical Sciences Institute, Australian National University <i>Summer Research Scholar</i> Supervisor: Prof. Lindon Roberts Project: Regularized black-box optimization algorithms for least-squares problems [J2]	Canberra, Australia Nov 2021 – Feb 2022

HONORS AND AWARDS

SEAS Travel Grant, Princeton University (MOPTA 2026)	2026
SEAS Travel Grant, Princeton University (ISMP 2024)	2024
Gordon Wu Fellowship, Princeton University	2023 – 2027
Hanna Neumann Prize for Mathematics IV (Honors), Australian National University	2023
Alan McIntosh Prize for Third Year Mathematics, Australian National University	2021
Dean's Science Commendation Letter, Australian National University	2020, 2021
Chancellor's Letter of Commendation, Australian National University	2020, 2021

PUBLICATIONS

Journal Articles

- [J2] Y. Liu, K. H. Lam, and L. Roberts. Black-box optimization algorithms for regularized least-squares problems. *IMA Journal of Numerical Analysis*, 2025. [arXiv:2407.14915](https://arxiv.org/abs/2407.14915)
- [J1] Q. Jin and Y. Liu. Convergence analysis of a stochastic heavy-ball method for linear ill-posed problems. *Journal of Computational and Applied Mathematics*, 2025. [arXiv:2406.16814](https://arxiv.org/abs/2406.16814)

Submitted

- [S1] Y. Liu and E. K. Ryu. MA⁴EG: Moving-anchor adaptive-adaptive accelerated extragradient method. Under review at *International Conference on Learning Representations (ICLR)*, 2027.

In Preparation

- [W1] A. A. Ahmadi, Y. Liu, and B. Stellato (alphabetical order). Second-order convex interpolation.

TALKS AND PRESENTATIONS

Computer-aided Analysis of Second-order Methods via Second-order Convex Interpolation

25th Modeling and Optimization: Theory and Applications (MOPTA), Lehigh University, Bethlehem, PA 2026
7th New York City Operations Day, New York, NY 2026

Black-box Optimization Algorithms for Regularized Least-squares Problems

25th International Symposium on Mathematical Programming (ISMP), Montréal, Canada 2024

Momentum Acceleration Technique and Its Application in Large-scale Optimization

Honors Conference, Australian National University, Canberra, Australia 2023

TEACHING EXPERIENCE

Teaching Assistant, Princeton University

ORF 307: Optimization (undergraduate) Spring 2025, Spring 2026, Fall 2026

ORF 522: Linear and Nonlinear Optimization (graduate) Fall 2024, Fall 2025

Education Developer, Australian National University

Feb 2022 – Feb 2023

Designed weekly quiz questions for first-year calculus and linear algebra courses using MATLAB Grader.

Demonstrator, Australian National University

MATH2320: Advanced Analysis 1: Metric Spaces and Applications S1 2023

COMP3670: Introduction to Machine Learning S2 2022

COMP2400: Relational Databases S2 2022

MA1: Mathematical Abstraction 1 (joint ANU–Shandong University program) S1 2021

TECHNICAL SKILLS

Programming: Python, MATLAB, Julia, R, Java, SQL, HTML

Tools: Git, L^AT_EX, Gurobi