# Yinbin Han

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## EDUCATION

**Stanford University** Sep 2025 – 2027 (Expected)
Doctor of Philosophy, Management Science and Engineering
*Advisors: Renyuan Xu (Stanford), Meisam Razaviyayn (USC)*

**New York University** Sep 2024 – Aug 2025
Ph.D. Student, Finance and Risk Engineering

**University of Southern California** Aug 2021 – Aug 2024
Ph.D. Student, Industrial and Systems Engineering

**Chinese University of Hong Kong, Shenzhen** Sep 2017 – Jun 2021
B.S. Mathematics, Rank 1/71

**University of California, Berkeley** Jan 2020 – May 2020
Exchange Student

## INDUSTRIAL EXPERIENCE

**Meta** May 2024 – Aug 2024
Research Scientist Intern

## RESEARCH INTERESTS

I am interested in trustworthy generative AI and its large-scale applications in fintech and operations research.

- Trustworthy generative AI and generative diffusion models
- Statistical and deep learning theory
- Stochastic and nonconvex optimization
- Stochastic control, reinforcement learning, and data-driven decision-making
- Quantitative finance and fintech
- AI for operations research

## WORKING PAPERS

1. H. Cao, M. Chen, Y. Han, and R. Xu. "Diffusion Models for Adaptive Sequential Data Generation." Major revision at *Operations Research*, 2026. **Winner, 2026 INFORMS Finance Section Best Student Paper**.
   - Short version accepted by *NeurIPS Workshop on ML×OR*, 2025.
2. Y. Han, and M. Razaviyayn. "CREAM: A Smoothed Augmented Lagrangian Method for Stochastic Nonconvex Optimization with Robust Constraints." Submitted to *SIAM Journal on Optimization*, 2026.
   - Short version accepted by *NeurIPS workshop on Constrained Optimization for Machine Learning*, 2025.
3. Y. Han, H. Jin, R. Xu, and Y. Yang. "Fine-tuning of Diffusion Models via Quadratic BSDE." In preparation, 2026.
4. E. Candès, Y. Han, P. Li, and R. Xu. "Distillation of Diffusion Models via W-flow." In preparation, 2026.
5. J. Blanchet, Y. Han, C. Xie, and R. Xu. "Generative Diffusion Models for Constrained Optimization Problems." In preparation, 2026.

**JOURNAL PUBLICATIONS**

1. Y. Han, M. Razaviyayn, and R. Xu. "Policy Gradient Converges to the Globally Optimal Policy for Nearly Linear-Quadratic Regulators." *SIAM Journal on Control and Optimization*, 2025.
    - Short version accepted by *NeurIPS Workshop Optimization for Machine Learning*, 2022.
2. Y. Han and Z. Wang. "Optimal Switching Policy for Batch Servers." *Operations Research Letters*, 2023.

**CONFERENCE PUBLICATIONS**

1. Y. Han, J. Zhang, M. Torres, F. Acero, and R. Xu. "Diffusion Models for Dynamic Volatility Surface Generation and Data-driven Hedging." *ACM International Conference on AI in Finance (ICAIF)*, 2026.
2. Y. Han, M. Razaviyayn, and R. Xu. "Stochastic Control for Fine-tuning Diffusion Models: Optimality, Regularity, and Convergence." *International Conference on Machine Learning (ICML)*, 2025.
3. Y. Han, M. Razaviyayn, and R. Xu. "Neural Network-based Score Estimation in Diffusion Models: Optimization and Generalization." *International Conference on Learning Representations (ICLR)*, 2024.
    - Short version accepted by *NeurIPS workshop on Diffusion Models*, 2023.
    - Extended version submitted to *Mathematics of Operations Research*, 2026.

**INVITED TALKS**

- INFORMS Annual Meeting, San Francisco — Nov 2026
- Workshop on "Mathematical Foundations of Diffusion Model for Efficient Sequential Data Modeling," IMSI, University of Chicago — Aug 2026
- SIAM Conference on Optimization (OP26), Edinburgh — Jun 2026
- INFORMS Optimization Society Conference, Atlanta — Mar 2026
- AFTLab PhD Student Workshop, Stanford — Mar 2026
- INFORMS Annual Meeting, Atlanta — Oct 2025
- International Conference on Continuous Optimization, Los Angeles — Jul 2025
- INFORMS Applied Probability Society Conference, Atlanta — Jun 2025
- Advances in Stochastic Control and Reinforcement Learning, Banff — Apr 2025
- INFORMS Annual Meeting, Seattle — Oct 2024
- INFORMS Optimization Society Conference, Houston — Mar 2024
- INFORMS Annual Meeting, Phoenix — Oct 2023
- INFORMS Annual Meeting, Indianapolis — Nov 2022

**POSTER PRESENTATIONS**

- ACM International Conference on AI in Finance, Milan — Nov 2026
- NeurIPS Workshop ML×OR, San Diego — Dec 2025
- NeurIPS Workshop on Constrained Optimization for Machine Learning, San Diego — Dec 2025
- International Conference on Machine Learning, Vancouver — Jul 2025
- Yale Sampling Conference, New Haven — Oct 2024
- International Conference on Learning Representations, Vienna — May 2024
- NeurIPS 2023 Workshop on Diffusion Models, New Orleans — Dec 2023
- NeurIPS Workshop OPT2022, New Orleans — Dec 2022

**ORGANIZERS**

- Session co-chair at INFORMS Annual Meeting 2026 — Nov 2026
- Co-organizer of NeurIPS 2025 Workshop on Generative AI in Finance — Dec 2025
- Session co-chair at International Conference on Continuous Optimization — July 2025
- Co-organizer of the NYC Brown Bag Reading Group on Foundations of Generative AI — Sep 2024
- Session co-chair at INFORMS Optimization Society Conference — Mar 2024

**REVIEWERS**

- Journals: SIAM Journal on Control and Optimization, European Journal of Operational Research, Finance and Stochastics, Journal of the American Statistical Association, Journal of Machine Learning Research (JMLR), Digital Finance
- Conferences: International Conference on Learning Representations (ICLR), International Conference on Machine Learning (ICML), Neural Information Processing Systems (NeurIPS), International Conference on Artificial Intelligence and Statistics (AISTATS), Conference on Uncertainty in Artificial Intelligence (UAI), Association for the Advancement of Artificial Intelligence (AAAI).

**PROFESSIONAL MEMBERSHIP**

- Institute for Operations Research and the Management Sciences (INFORMS)
- Applied Probability Society (APS)
- Member, Society for Industrial and Applied Mathematics (SIAM)

**TEACHING EXPERIENCE**

**NYU, Teaching Assistant**

- FRE-GY 5020 & 5030: Bootcamp — Summer 2025
- FRE-GY 6233: Stochastic Calculus and Option Pricing — Spring 2025
- FRE-GY 9073: Stochastic Systems and Modern ML Theory — Fall 2024

**USC, Teaching Assistant**

- ISE 530: Optimization Methods for Analytics — Fall 2023, Spring 2024

**CUHKSZ, Undergraduate Student Teaching Fellow**

- MAT2002: Ordinary Differential Equations — Spring 2021
- BIO2001: General Biology — Summer 2019

**AWARDS & HONORS**

- Winner, INFORMS Finance Section Best Student Paper — 2026
- ICCOPT 2025 Student Travel Grant — Jun 2025
- Yale Sampling Conference Student Travel Grant — Oct 2024
- National Scholarship of China — 2020
- Academic Performance Scholarship, CUHKSZ — 2018, 2019, 2020
- Dean's List, CUHKSZ — 2018, 2019, 2020

**TECHNICAL SKILLS**

**Programming Languages:**

- Skilled in agentic AI tools (Claude Code, Codex) and harness engineering
- Proficient in Python, Numpy, Pandas, PyTorch, R, and MATLAB
- Familiar with Java, C/C++, MySQL
- Experience with Hadoop, Spark, and CUDA