

Cheng GAO

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EDUCATION

Princeton University

Princeton, NJ

Ph. D. in Operations Research & Financial Engineering, GPA: 4.0 / 4.0

Sep 2021 – May 2025 (expected)

- **Research Areas:** High-dimensional Statistics, Transfer Learning Theory, and LLM Transformer Theory
- **Courses:** Statistical Machine Learning, Data Science Theory, Advanced Optimization, Computational Finance

Fudan University

Shanghai, China

B.S. in Mathematics and Applied Mathematics, Major GPA: 3.87 / 4.0, Exchange GPA: 3.94 / 4.0

Sep 2017 – Jun 2021

- **Courses:** Real Analysis, Deep Learning, Data Structures, Probabilistic Measure Theory, Causal Inference
- **Exchange Experience:** UC Berkeley, Department of Statistics, Aug 2019 - Jan 2020

PROFESSIONAL EXPERIENCE

[Email chenggao@princeton.edu for a complete version.]

DRW

Chicago, IL

Quantitative Research Intern, Cumberland Systematics

Jun 2024 – Aug 2024

- Deep learning modeling & feature engineering on the systematic mid-frequency crypto risk-taking team.

Trexquant

Stamford, CT (Remote)

Remote Intern, Global Alpha Researcher

Jan 2022 – Mar 2022

- Alpha mining and algorithm development for mid-frequency equity data.

Fudan-Stanford Institute for China Financial Technology and Risk-Analytics

Shanghai, China

Research Assistant

Nov 2018 – Feb 2019

- Enhanced CAPM portfolio models for the Chinese equity market.

PUBLICATIONS

Robust Transfer Learning Against Unreliable Source Data

*Cheng Gao**, Jason M. Klusowski*, Jianqing Fan*. (2023). *Major Revision in the Annals of Statistics*

Global Convergence in Training Large-Scale Transformers

*Cheng Gao**, Y. Cao*, Z. Li, Y. He, M. Wang, H. Liu, J. M. Klusowski†, J. Fan†. (2024). *Submitted to NeurIPS 2024*

One-Layer Transformer Provably Learns One-Nearest Neighbor in Context

*Z. Li**, Y. Cao*, **Cheng Gao**, Y. He, H. Liu, J. M. Klusowski, J. Fan†, M. Wang†. (2024). *Submitted to NeurIPS 2024*

SELECTED AWARDS

Chinese Mathematical Olympiad (CMO): Silver Medal (China top 150), IMO National reserve team

2016

National Scholarship: Top 1%, Selected by Fudan University

2018

Kaggle Competition (Optiver - Trading at the Close): Top 3%, Silver Medal

2024

ACTIVITIES

PhD & Postdoc Discovery Day, Susquehanna International Group

Bala Cynwyd, PA

Insights into Susquehanna's approach to quantitative trading and research.

Apr 2024

QTC Wintercamp Participant, Jane Street

Hong Kong SAR

Explore mathematical and financial topics through lectures, interactive games, and mock trading sessions.

Jan 2019

SKILLS

Programming Skills: Proficient in Python with **expertise in PyTorch for deep learning**

Expertise: Statistical Analysis, Large-Scale Modeling, Alpha Feature Engineering