

# Nanyi Zhang

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## Education

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**Peking University** Sep 2023 - Jul 2025

*B.A. in Financial Mathematics* Beijing

- **course:** Stochastic Analysis(A+), Advanced Probability Theory(A), Reinforcement Learning, Machine Learning, Algorithms in Big Data Analysis

**University of International Business and Economics** Sep 2019 - Jul 2023

*B.S. in Actuarial Science (GPA: 3.8 / 4.00)* Beijing

- **course:** Mathematical Analysis(96, 100), Real Analysis(99), Complex Analysis(96), Probability Theory(98), Mathematical Statistics(94), Stochastic Process(100), Differentiation Equations(94), Macro Economics(99), Micro Economics(98), Econometrics(94), Stochastic Analysis(95), Time Series Analysis(97)

## Research Experience

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**Pricing Vulnerable Spread Options under an Intensity-based Model** Jan 2022 – Apr 2022

*Lead Researcher*

- This paper proposes an intensity-based model to price spread options with default risk. Default risk is captured by a Cox process, whose intensity is correlated with the volatility. We also propose a more general correlation structure than previous works.

**RGBoost: A revised gradient direction boosting machine** Jan 2023 – Apr 2023

*Lead Researcher*

- This paper presents a novel variant of the gradient boosting algorithm, termed RGBoost, that enhances performance by modifying the negative gradient in every iteration.

## Work Experience

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**Luoshu Investment** May 2023 - Sep 2023

*Quantitative Researcher* Shanghai

- Conducted high-frequency options strategy research, finding predictive signals, and stochastic control based option arbitrage modeling. Conducted research on market-making strategies based on reinforcement learning.
- Replicated and enhanced the 'deeplop' model by introducing modifications such as residual connections, resulting in a 0.04 average score improvement on the original dataset, and applied it to options volatility forecasting.

## Skills

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**Programming Language:** Python, R, C++, Linux

**Skills:** Pytorch, Docker, Git, ...

## Awards & Honors

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- Special Scholarship for Graduate Students (2023)
- Outstanding Graduate of Beijing (2023)
- National Scholarship (2020, 2022)
- Comprehensive First-Class Scholarship (2020, 2021, 2022)
- First Prize in the National Mathematics Competition for College Students (2020, 2021)
- First Prize in the National Mathematics Modeling Competition for College Students (2021)