

GUANYU (MARTIN) YAO

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EDUCATION

NEW YORK UNIVERSITY

New York, NY

The Courant Institute of Mathematical Sciences

MS in Mathematics in Finance (expected – Dec. 2020)

- **Current Coursework:** Quantitative portfolio theory, interest rate and credit derivatives, Monte Carlo and finite difference methods, factor and principal-component models, Black Scholes model, SDE and Ito calculus, risk management, and object-oriented programming
- **Future Coursework:** Interest rate and FX models (CIR, Hull-White), time series analysis, optimization methods, risk management (market and credit risk, VaR and stress testing)

NEW YORK UNIVERSITY

New York, NY

BA in Mathematics (2015 – 2019)

- **Coursework:** Linear algebra, multivariate calculus, math modeling, differential equations, probability and statistics, micro/macro-economics, and data structures
- **Honors:** Summa Cum Laude, Phi Beta Kappa, Steffi Berne Scholarship, Dean's Honors List

EXPERIENCE

HAITONG SECURITIES

Shanghai, China

Quantitative Analyst Intern, Equity Investment Department (Jun. 2019 – Aug. 2019)

- Constructed multi-factor model to select high-quality stocks in CSI 500 and CSI 300
- Analyzed factors in profitability, growth, capital structure, and financial ratios, then explored their correlation, synthesized factors, and back-tested long-short trading strategies
- Performed data analysis using Python packages, such as NumPy, Pandas, and Matplotlib

GUOTAI JUNAN SECURITIES

Shanghai, China

Quantitative Analyst Intern, Derivative Pricing Department (Dec. 2018 – Jan. 2019)

- Researched Vanilla/OTC option pricing models for the derivatives investment division
- Implemented Black-Scholes Merton model, approximated and visualized numerical Greeks
- Analyzed American option pricing methods (Bjerksund and Stensland) in Excel VBA
- Programmed, tested, and debugged pricing model of single-asset exotic options
- Simulated the dynamic delta hedging process, and improved its hedging error

PROJECTS

NEW YORK UNIVERSITY

New York, NY

Combinatorics and Simulations of Self-avoiding Random Walks

- Proved sub-additive property of connective constant and resulting corollaries
- Verified Hammersley-Welsh method through combinatorial arguments
- Performed static Monte-Carlo simulations in Python, reduced attrition constant for long walks

Mean and Variance Portfolio Optimization

- Investigated efficient asset allocations of stocks in S&P 500 through mean-variance analysis
- Conducted principal component analysis on empirical correlation/covariance matrices by extracting, cleaning, and transforming historical data in R

COMPUTER SKILLS/OTHER

Programming Languages: Java, Python, R, Visual Basic for Applications

Other Software: Microsoft OS and Office, MATLAB, LaTeX

Languages: English (fluent), Mandarin (native)