

TIANYI WAN

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EDUCATION

NEW YORK UNIVERSITY

New York, NY

The Courant Institute of Mathematical Sciences

M.S. in Mathematics in Finance (expected December 2022)

- **Coursework:** OOP and data structures in Java, Lasso, Ridge, PCA, Bayesian statistics, HMMs, utility theory, B-S formula, Ito's lemma, duration and convexity, interest rate models

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Wuhan, China

B.S. in Mathematics and Applied Mathematics (June 2021)

- **Coursework:** Probability Theory, C++, Stochastic Processes, Markov Chain, Martingale, Numerical Methods, Heat Conduction Equation, Finite Element Method, Jordan Normal Form

EXPERIENCE

ERNST & YOUNG

Beijing, China

Data Analytics Intern (Summer 2020)

- Conducted primary industry research on modified plastics, quantified research ability for 10 leading companies, distilled 6 key success factors for future development
- Orchestrated data visualization on market scale forecasting and downstream market analysis, estimated its output to increase by 10.2% and downstream market demand by 10.6% in 2024
- Built comprehensive data collecting on policy, research reports and financial statements, crafted a list of predictors for simulating corporate profits; utilized one-hot encoding, Text2vec/TFIDF Vectorizer to transform categorical/text variables into fixed size vectors

SHENWAN HONGYUAN SECURITIES

Shanghai, China

Sales & Trading Intern (January 2020 - May 2020)

- Participated in crafting the Shenwan Hongyuan Price Index Strategy, a momentum-based stock selection and trading strategy that tracks the CSI 500 index
- Improved the strategy through parameter adjustment/standardization and achieved annualized excess returns of 27.3% in long-term back-testing
- Took responsibility in the collection of daily sales data; Communicated with dozens of securities on business matters of our department by phone meeting

PROJECTS

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Wuhan, China

Quantitative Lab (August 2020 - June 2021)

- Utilized a composite network architecture based on long short-term memory for A-share stock forecasting and applied different stochastic optimizers to improve the prediction performance
- Achieved annualized excess returns of 14.26% on average for bellwethers in 6 major industries, from 2016 - 2020, based on Adam optimizer
- Researched implementations of trading strategies including statistical arbitrage based on optimal causal paths and commodity futures trading based on skewness of returns distribution

Applications of PDE and Numerical Methods in Option Pricing (2019)

- Decomposed the adjustment term in the pricing equation of the European options, derived more solutions account for variations in dividends and other pricing variables
- Applied the Barone-Adesi and Whaley (BAW) model, derived approximate solutions of the American option price based on its decomposition form and implementation boundary
- Modeled price movements of European call options on stocks through Monte Carlo simulation

COMPUTATIONAL SKILLS/OTHER

Programming Languages: Python (NumPy, Matplotlib, statsmodels, pandas, Keras), MATLAB, Java
Languages: Mandarin (native), English (fluent) **Interests:** Fitness, Trading, Calligraphy