Ziyuan Gong

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EDUCATION

NEW YORK UNIVERSITY New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance (expected - Dec 2022)

- ***Future Coursework:*** OOP in java, Black-Sholes, VaR, algorithmic trading, bagging & boosting

WUHAN UNIVERSITY Wuhan, China
B.S. in Financial Engineering (Sep 2016 - Jun 2020)

- ***Coursework:*** linear algebra, probability, ODE, real analysis, numerical analysis, statistical modeling, interpolation, regression, classification, clustering, neural network, data structure, factor investment, arbitrage, derivatives Greeks & pricing & volatility smile & term structure

EXPERIENCE

Tencent Holdings Ltd. Shenzhen, China
Data Mining & NLP Intern/ LightSpeed & Quantum Studios Tech Center **(**Oct 2020 - May 2021)

- Performed users' sentiment analysis: Scraped, cleaned, tokenized, and filtered users' comments, chats to get key emotional words matching with established corpus of sentiment; Implemented bag of bigrams/trigrams, IF-IDF, Doc2Vec, BERT, SSWE algorithms for sentence embeddings and classification of users' negative/ positive sentiment
- Detected trading anomaly: Applied XGBoost, GBDT, ridge regression, MLP neural network for regression to identify overpriced & underpriced items based on value features; Realized AutoEncoder, Isolation Forest, one-class SVM algorithms to directly discern trading outliers based on anomaly features
- Researched time series algorithms for predicting users' asset change: Applied ARIMA, Prophet univariate time series models as basic forecast reference; Conducted VAR, LSTM, GRU, Attention LSTM multivariate models with extra users' features to enhance accuracy

Morgan Stanley Huaxin Fund Management Co., Ltd. Shenzhen, China
Quantitative Risk Analyst Intern/ Risk Management Department **(**Nov 2019 - Feb 2020)

- Conducted performance attribution analysis to identify the source of profits and risk of managed funds via Brinson attribution model and risk-based performance attribution model (Barra)

SIYE Investment Management Co., Ltd. Shanghai, China
Quantitative Research Intern/ Fixed Income Research Department **(**Jul 2019 - Oct 2019)

- Applied Monte Carlo simulation to price convertible bonds considering its special provisions; Researched and back-tested convertible bond arbitrage strategies based on calculated implied & historical volatility, volatility curve & term structure, and Greeks

Changjiang Futures Co., Ltd Wuhan, China
Derivative Trader Intern/ Options and Structured Finance Department **(**Jan 2019 - Jun 2019)

- Researched and generated CRR tree and Monte Carlo simulation to price American & exotic options including barrier, chooser, ladder, shout, rainbow, and Asian shout options
- Formulated option volatility and spread & combo strategies based on volatility skew, Greeks, volatility term structure; back-tested and optimized trading strategies including P&L analysis by Greeks and setting entry, profit-taking, and stop-loss trigger conditions
- Constructed trend and value factors of the underlying asset from features of option including volume, price, volatility of call/put option at/in/out of the money to predict the underlying asset by linear regression, SVM, and regression tree models

PROJECT

Time Series Analysis and Derivatives Pricing Project (R)

- Built ARIMA, GARCH time series models, and risk metrics to analyze financial data
- Improved typical option pricing model to convert fixed interest rates and volatility to variables by constructing NSS term structure model and IGARCH, EGARCH models

COMPUTATIONAL SKILLS

Programming Languages: C, C++, C#, Python, R, VBA, Java, MATLAB, SAS, SQL, Spark
Languages: English (fluent), Mandarin (native)