

TIANAI GUAN

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EDUCATION

NEW YORK UNIVERSITY

The Courant Institute of Mathematical Sciences

New York, NY

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

- **Coursework:** Brownian motion, Black-Scholes, Monte Carlo, fixed income, Java object pool, VaR, scientific computing in Python, machine learning, applications of big data to finance

NANKAI UNIVERSITY

Tianjin, China

BA in Information Management and Information System (June 2020)

Minor in Applied Mathematics (June 2020)

- **Coursework:** financial engineering, calculus, advanced algebra, ODE, probability theory, statistics, econometrics, data mining, time series, bootstrap, MLE, data structure, algorithms
- **Awards:** Naikai University First Prize Scholarship (top 5%), Academic Excellence Scholarship

EXPERIENCE

Ping An Technology (Shenzhen) Co., Ltd.

Beijing, China

Algorithm Engineer Intern (Nov 2020-May 2021)

- Trained generative adversarial networks based on data to implement intelligent customer service technology, evaluated models' performance, and lightweightened models without distortion
- Created medication detection models by facial point detection and behavior recognition models, combined with finite-state machine to automatically recognize videos uploaded by patients
- Published patents in deep learning, such as data enhancement and semantic segmentation

MiCai Investment Consulting Co., Ltd.

Beijing, China

Quantitative Intern (Jul 2019-Sept 2019)

- Backtested strategies of MACD, RSI, KDJ in stock index futures market on TradeBlazer
- Organized 1,500 transaction records, optimized daily closing time to reduce retracement
- Created reversal strategy combining multiple technical factors, improving backtesting results with return rate increased by 1.5% and Sharpe Ratio increased by 0.4

Jiawo Asset Management Co., Ltd.

Beijing, China

Quantitative Intern (Jan 2019-Mar 2019)

- Implemented SmartBeta strategies by filtering liquidity factors, fundamental factors, risk factors and dividend yields with backtest results of annual return of 17.9% and Sharpe Ratio of 2.1
- Established GARCH (1,1) model to predict volatility of stocks by processing 1,000 stock data

PROJECTS

NANKAI UNIVERSITY

Tianjin, China

Statistical Arbitrage of the Chinese Stock Market (Python)(Mar 2019-May 2019)

- Built a dynamic pairs trading strategy by PCA, obtaining residual and characterizing the mean reversion characteristics of the residual by Ornstein-Uhlenbeck process
- Backtested pairs trading strategy with stock data from 15 industries from 2011 to 2018 in Chinese market with annualized return rate of PCA-based strategy of 27.75%
- Improved model by Kalman filter to increase profitability and reduce retracement

Inventory Management of Bitcoin Futures High-Frequency Market-Making Strategy (Mar-Jun 2020)

- Improved backtesting & autotrading platform based on vnpy to conduct cryptocurrency trading
- Implemented Avellaneda-Stoikov market-making model to calculate best ask and bid on bitcoin
- Developed model by maximum inventory constraint for new best ask and bid
- Verified new model efficiency by backtesting results of similar profit and lower largest position

COMPUTATIONAL SKILLS/OTHER

Programming Languages: Python, R, SQL, C++/C, Java

Languages: Chinese (native), English (fluent)

Affiliations/Certifications: CFA Level III candidate