

Shengjun (James) Guan

+1 (812) 223-6448 // james.guan@nyu.edu // linkedin.com/in/jamesguanshengjun

EDUCATION

NEW YORK UNIVERSITY

The Courant Institute of Mathematical Sciences

New York, NY

09/23 - 12/24

M.S. in Mathematics in Finance (Cumulative GPA: 3.9/4)

- **Coursework:** financial data science, machine learning, computational statistics, data-driven modeling, time-series analysis, scientific computing, stochastic calculus

ROSE-HULMAN INSTITUTE OF TECHNOLOGY

Terre Haute, IN

B.S. in Mathematics with Double Major in Data Science (Cumulative GPA: 3.5/4)

09/18 - 05/23

- **Coursework:** operation research, deep learning, machine learning, software system design, SQL, NoSQL, OOP
- **Honors/Awards:** Dean's list 9 quarters, cum laude, Henry Turner Eddy Award for Application of Mathematics (2 students awarded out of class of 2023)

EXPERIENCE

SIMO Capital Holding, LLC

New York, NY

Equity Derivatives Quantitative Researcher Intern

11/23 - 08/24

- Applied KL divergence to analyze financial derivative trades and quote data, measuring informational imbalances to predict underlying asset directionality
- Generated features by applying time-series models across various traded assets combined with prior belief
- Architected and deployed a high-frequency, multi-asset research and trading platform, integrating backtesting capabilities and real-time analysis to support advanced strategy development
- Optimized implied volatility calculations with data structure, achieving a 5x increase in computational speed, significantly improving the efficiency of options pricing models
- Designed and constructed universal data pipeline that connects to data providers APIs, handling large volumes of high-frequency data, segmenting by domains, and processing it to deliver real-time analysis
- Developed an API that facilitates cloud-based backtesting with state-tracking capabilities, supported by a secured backend infrastructure using customized VPN in-networking and tunneling technology

PAVUS AI

New York, NY

Software Engineer/ Data Science Intern

01/25 - 04/25

- Designed and automated data visualization for product cost price, incorporating specifications and key metrics, improving analysis efficiency by 5x
- Developed automated data analysis pipelines, streamlining insight generation and reducing twice manual effort
- Applied NLP techniques to process and clean unstructured product descriptions, improving data quality
- Leveraged machine learning models to classify and categorize products, enhancing data organization and usability
- Utilized AI LLMs to generate product categories, improving classification accuracy and scalability
- Built and deployed FastAPI-based ML/LLM services on AWS using asynchronous and multithreading techniques within a distributed system, enabling real-time invoice extraction

PROJECTS

High-Frequency Oil Trading Strategies Design and Backtest (Python)

- Designed multiple sentiment-driven volatility trading strategies on USO (oil strategy ETF)
- Backtested strategies at high-frequency framework including traded quote and quote prices
- Optimized volatility strategies with delta-gamma signals on future (contract) and fundamentals

Pipeline-Based Equity Backtest System (Python)

- Designed and implemented modularized equity backtest system enables user to smoothly design equity strategy and signals with one-click backtesting and portfolio generation environment

NoSQL Database for Trading System (Python)

- Designed and implemented database system that stores time series stock data and textual data using Mongo, Neo4j, and Influx DB NoSQL database to improve efficiency and resistance to failure
- Developed queue system using Kafka between data provider API and database system, making system more robust

Programming Languages: C++, Python, Java, R, MATLAB

Languages: English (fluent) and Mandarin (native)

Affiliations/Certifications: Deep Learning Specialization on Deeplearning.ai, Passed FRM Level 1,

AI for Trading on Udacity Program, Golden Level in WorldQuant Challenge (alpha research)