SHENGJUN (JAMES) GUAN

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

EDUCATION

Expected 12/24   **NEW YORK UNIVERSITY**   New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance
- *Expected Coursework:* OOP (Java, Python), machine learning, Black-Scholes Model, stochastic volatility model, local volatility model, time series analysis, fixed-income model

09/18 - 05/23   **ROSE-HULMAN INSTITUTE OF TECHNOLOGY**   Terre Haute, IN
B.S. in Mathematics and Data Science (Double Major)
- *Coursework:* stochastics and deterministic models in operating research, Bayesian statistics, applied linear regression, data mining, deep learning, machine learning, numerical method
- *Honors/Awards:* Dean's list 9 quarters, cum laude, Henry Turner Eddy Award for Application of Mathematics for 2 students out of class of 2023

PROJECTS

09/22 - 05/23   **ROSE-HULMAN INSTITUTE OF TECHNOLOGY**   Terre Haute, IN
Math Senior Thesis Research: Stochastic Model and Option Pricing (Python)
- Conducted literature reviews on stochastic volatility models and parameter estimation methodologies including extended Kalman filter
- Experimented with Double-Heston model with stochastic interest rate component to derive closed-form pricing formula for European option to extend model flexibility in theory
- Solved pricing equations under stochastic models with implicit finite schemes
- Implemented rolling-window BSM model trading strategy within VectorBT (Python) framework on FRCB stock, which resulted in more than 50% return in long-only position during backtesting

06/22 - 08/22   **Rose-Hulman Summer Research Fellowship (R, Python)**
- Reviewed literature on power of one-sample permutation, bootstrap tests, and student's t-test
- Boosted simulation speed on GPU by 100 times and rendered interactive data visualization from results in R to compare power of statistical tests across sample sizes

12/22 - 02/23   **NoSQL Database for Trading System (Python)**
- Led 3-member team to engineer database that stored asset information, stock data, and company news data using Mongo, Neo4j, and InfluxDB
- Developed queue system using Kafka between Alpaca API and database systems

1/21 - 02/21   **Machine Learning on SPY500 (Python)**
- Used time-series modeling, KNN, random forests, PCA on SPY500 and VIX data to predict binary one-day return, with 56% accuracy
- Infused risk management signals generated by VaR and ES models with ML for prediction

06/21 – 09/21   **Certificate in Quantitative (CQF) Finance Program Projects (Python)**
- Solved Black-Scholes equation using partial differential equation and Martingale approaches
- Developed and backtested trading strategy using signals from random forest and trees

01/21 –02/21   **Coffee Controller System Software Design and Implementation (Java)**
- Led 4-member team to design and implement coffee controller system that involved business order management platform, coffee controller processing, and data layers
- Incorporated factory, observer, and decorator software design patterns

COMPUTATIONAL SKILLS / OTHER

Programming Languages: Python, Java, R, NoSQL, MATLAB, Maple
Languages: English (fluent) and Mandarin (native)
Affiliations/Certifications: Passed FRM Level 1, Deep Learning Specialization on Deeplearning.ai, AI for Trading on Udacity Program, Golden Level in WorldQuant Challenge (alpha research)