

Ashutosh

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EDUCATION

Rutgers Business School (Newark, NJ), Master of Quantitative Finance

Dec 2023

- **GPA: 3.7**
- **Courses:** Financial Time Series, Stochastic Calculus, Numerical Analysis, Risk Management, Quantitative Trading Strategies, Derivatives, Analysis of Fixed Income, Financial Modelling, Applied Portfolio Management

Vellore Institute of Technology (Chennai, India), Bachelor of Technology in Electronics and Communication

Jul 2021

- **GPA: 4.0**
- **Courses:** Linear Algebra, Statistics, Calculus, Data Structures and Algorithm, Differential and Difference equation, Probability and Random Theory, International Business, Operating Systems

PROFESSIONAL EXPERIENCE

Quantitative Developer, QuantConnect

Jan 2024-Present

Assisting with technical challenges and implementing research concepts within the trading platform.

- Contributed to QuantConnect's Alpha Streams platform by designing and reviewing code modules (Python) that enable algorithm developers to license trading strategies to hedge funds and institutional investors.
- Optimized LEAN, an open-source algorithmic trading engine (C#), by debugging, implementing fixes, developing modules for CME futures, integrating rebate fees/rates, expanding Kraken ticker mappings, and enhancing FRED API connectivity resilience.
- Researched academic papers for the QuantConnect Strategy Library, provided critical support to the QuantConnect community in designing strategies, tutorials, and documentation.

Quant Intern, QuantConnect

July 2023-Dec 2023

Utilized advanced large language models (LLMs) to drive strategies and processes at QuantConnect's algorithmic trading platform.

- Executed a live mean reversion strategy on the IWM index, leveraging Tiingo news sentiment analysis.
- Automated workflows via Python scripts leveraging LLMs from HuggingFace and OpenAI which is now used to create automated release notes for the public forum. Collaborated on developing and refining datasets for Chatbot Mia

Product Analyst, Secured Funding Division (Anvil E-Trading), ION Group

Feb 2021-Jul 2022

Supported banks to use Securities Lending and Repurchase Agreement electronic over-the-counter trading software (Anvil).

- Ensured 24x7 infrastructure availability for ION's Anvil Trade Processing solution within an Agile framework.
- Enhanced trade lifecycle management for repo desks. Improved data transparency, collaboration, and operational efficiency, contributing to overall repo business growth by working with major banks and success gaining experience in Atlassian tools.

TECHNICAL SKILLS

- **Programming Languages:** Python (2y), SQL (PostgreSQL, MySQL, SQLite) (0.5y), R (1y), MATLAB (2y), C# (0.5y), C (1y), C++ (2y)
- **Tools and Frameworks:** Pandas, NumPy, Pytorch, scikit-learn, TensorFlow, GitHub, AWS Chalice, MS Office suite

ACADEMIC PROJECTS

- [Numerical Analysis: Option Pricing and Optimization Using Finite Difference Methods](#) **Fall 2023**
Applied finite difference methods (MATLAB, R) to price options, employing discretized Black-Scholes PDE with implicit backward and explicit forward Euler methods. Optimized early exercise decisions and achieved lower errors with backward Euler.
- [Machine Learning: Forecast returns of panel data using transformer neural network](#) **Fall 2023**
Created a transformer neural network architecture integrating features from LightGBM ranking, featuring 6 shallow layers, optimized via hyperparameter tuning and Adam loss function for 60% directional accuracy on out-of-sample testing. (Python)
- [Econometrics: Stock price evaluation of Microsoft \(MSFT\) and Analysis](#) **Fall 2022**
Developed a multivariable linear regression model predicting Microsoft (MSFT) stock price from historical data, refined through variable elimination, weighted least squares for heteroscedasticity correction, and residual analysis in R, comparing R-square, p-values, and residual distributions. (R-Studio)

CERTIFICATION

Bloomberg Market Concepts, Markov Chains and Markov Jumps (Sep 2021); Build 15 Augmented Reality Apps with Unity and Vuforia (May 2020); The Complete Self-Driving Car Course-Applied Deep Learning (May 2020)

AWARDS AND EXTRACURRICULAR ACTIVITIES

- Played as a professional soccer player in major Indian soccer leagues. Most promising athlete of the year 2015 and 2017.
- Placed 5th among 20 participants from 6 countries, Indian Rover Challenge 2019, Mars Society South Asia