Rohan Malhotra

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New York Metropolitan Area | Chatham, New Jersey

Education

Virginia Tech Honors College of Engineering — Blacksburg, VA
Candidate for BE Computer Science and Minor in Math — *Expected May 2027*

- Relevant Coursework: Calculus 1, 2, 3, Software Engineering I, Engineering Principles 1, 2, Software Design & Data Structures, Discrete Mathematics, Computer Organization, Data Structures and Algorithms
- **Major GPA: 4.0**

Skills

Languages: Python, Java, C++, SQL, C, R, HTML/CSS, MATLAB, JavaScript, LaTeX
Technologies: Git, GitHub, Google API, Polygon API, Bloomberg Open API, Overleaf, Excel, Tableau
Frameworks/Libraries: Pandas, NumPy, Matplotlib, Quandl, statsmodels, PyAlgoTrade, SciPy, QuantLib, Node.js, Next.js, AngularJS, React

Experience

Software Engineering Intern — Feb 2025 – August 2025
Y-Axis

- Collaborated with **UI/UX** designers to convert design prototypes into responsive web pages.
- Improved **SEO rankings** through semantic markup, **DOM manipulation**.
- Created a **13% increase** in impressions on Google Search Console.

Data Analytics Intern — Jun 2024 – Aug 2024
ARESS Software

- Analyzed stock indicators (**MACD, SMA, RSI**) to forecast market trends.
- Built **LASSO/Ridge Regression models** and developed web scrapers to automate data collection.
- Enhanced data visualization and reporting in **Excel** for actionable insights for senior leadership on data usage statistics.

Undergraduate Research Assistant — Aug 2024 – May 2025
Hume Center for National Security and Technology

- Researched advanced **imaging** and **signal** processing for space-based and defense applications, including ocean monitoring and space observation.
- Utilized **Python** and satellite communication protocols to ensure efficient data transmission from the CubeSat's imaging system.
- Contributed to a proposal submission for **NASA's CubeSat Launch Initiative**, focusing on integrating autonomous imaging and communication systems for nanosatellite operations.

Publications

Reddit Data in Quantitative Financial Models | Published at VTechWorks — Feb 2025

- Co-authored a paper analyzing Reddit-driven retail sentiment and its impact on market volatility.
- Examined post-GameStop and AMC dynamics, addressing both predictive potential and ethical concerns.
- Included an extended analysis on how online sentiment correlates with market fluctuations.
- Available at: vtechworks.lib.vt.edu

An Economic Approach to Optimize Capital Allocation | Published at VTechWorks — Nov 2024

- Explores the use of the Kelly Criterion to determine the optimal fraction of capital to risk.
- Presents a systematic framework for maximizing long-term capital growth via logarithmic utility.
- Discusses risk-adjusted return strategies and capital growth optimization.
- Available at: vtechworks.lib.vt.edu

Projects

Machine Learning RSI Predictor Using Starbucks Coffee Sales Data | *Random Forest, Pandas, NumPy* — Sept 2024 – Jan 2025

- Developed a **Random Forest** based model to predict **RSI** for SPY using yearly Starbucks coffee sales data, yielding insights on regional sales performance.
- Engineered features like **SMA**, **MACD**, **RSI**, and **Volume** to enhance prediction accuracy.
- Evaluated multiple algorithms to determine the optimal approach.

Quantum Oscillating Physics Stock Model | *Google API, Polygon API, NumPy, MatPlotLib* — Feb 2025 – June 2025

- Automated data collection using **Web Scraping** for SPY and QQQ with **Google API** and **Polygon API**.
- Developed a screening model to identify overvalued stocks using oscillatory motion concepts.
- Incorporated cyclical analysis to model price fluctuations over daily periods.