Humzah Merchant

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EDUCATION

The University of Chicago **Chicago, IL**
B.S. Statistics and Computer Science (Aggregate GPA: 3.9/4.0) **Expected June 2026**

- Courses: Data Structures, Differential Equations and Linear Algebra, Probability Theory, Statistics, Dynamic Modeling, Advanced Business Finance, Trading and Exchanges, Software Engineering

SKILLS

Computing: C++, Python, NumPy/Pandas, MATLAB, SQL, Git
Knowledge: Software Engineering, Statistics and Data Analysis, Financial Markets and Market Microstructure, Quantitative Research, Algorithmic Trading, Econometrics, Regression Analysis, Time Series Analysis

EXPERIENCE

Apollo Global Management **El Segundo, CA**
Software Engineering Intern **May 2024 – August 2024**

- Received return offer for a Quantitative Strategist Intern Position.
- Initiated and developed an internal tool from scratch using Python, Angular, and SQL, which went through 5+ user demos and was successfully deployed through development, UAT, and production stages. This tool is projected to save the team 15-20 hours per week.
- Developed a chatbot integrated with internal data, enabling analysts to query and process data without hallucinations.

NASA Johnson Space Center **Houston, TX**
Software Engineering Intern **June 2023 – August 2023**

- Lead a team of high school level interns on the automation of the Microchariot Rover around the NASA moon rock yard using a combination of GPS and other sensors as part of the Summer Robotics Academy
- Developed the project using a mix of Python (GUI, Networking, Pathfinding Algorithms) and C++ (Robot Controls)

Mechanical Engineering Intern **June 2022 – August 2022**

- Designed new parts for the lunar terrain vehicle ground test unit (LTV GTU) and the refurbishment parts of the Space Exploration Vehicle (SEV) as part of the Summer Robotics Academy in SolidWorks and Fusion 360

RESEARCH

Understanding Markets in "Event Time" **October 2023 – May 2024**

- Directed a research project analyzing markets in "event time," focusing on periods of equal market activity and return dispersion, and comparing the results to traditional "calendar time" models
- Developed and iterated new models, generating and implementing fresh ideas to advance research directions
- Utilized Python, Pandas, and SQL to gather and process large datasets from NASDAQ and NYSE
- Applied statistical techniques, including time series and cross-sectional regressions, and T-tests to analyze and interpret data

EXTRACURRICULAR

Hidden Markov Model Price Predictor **May 2024 – Present**

- Predicts stock returns by building a HMM from historical stock return data and compares it to results using Python
- Developing a V2 version that takes into account more complex factors such as market and industry returns

IMC Prosperity Trading Competitions **April 2024 and March 2023**

- Competed in 10-day algorithmic trading challenges hosted by IMC Trading
- Developed trading strategies and models including market making, pure arbitrage, pairs trading, adverse selection, Black-Scholes options pricing, and Monte Carlo Simulations, using Python to trade simulated assets and securities

UChicago Quantitative Portfolio Management and Algorithmic Trading **June 2023 – August 2023**

- Quantitative Portfolio Management Topics: Mean-Variance Optimization, Regression, Asset Pricing, Forecasting
- Algorithmic Trading Topics: Trading Book System Design, Data Mining and Technical Analysis, Machine Learning and Dimensionality Reduction, High Frequency Trading System Design