Varun Budati

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EDUCATION

Virginia Tech, Blacksburg, Virginia — Aug 2023 – May 2027
B.S. in Computer Science — CFA Level 1 Candidate — **GPA**: 3.59/4.0
Minor in Mathematics & Finance — **In-Major GPA**: 3.76/4.0

SKILLS & COURSEWORK

Programming Languages: Python (5 years), MySQL (2 years), Java, C, HTML/CSS

Frameworks & Libraries: NumPy, Pandas, Matplotlib, Plotly, Sklearn, Seaborn, SciPy, React, Node.js, Flask

Developer Tools & OS: Git, Docker, AWS, Linux/Unix

Coursework: Machine Learning for Finance, Statistical Simulation, Data Structures & Algorithms, Computer Systems

Certifications: Financial Analysis (Power BI), Akuna Capital Options 201 (ID: 92400251)

WORK EXPERIENCE

Quantitative Researcher, Dataism Lab for Quantitative Finance - Virginia Tech, Blacksburg, Virginia — October 2024 – Present

- Researching optimal order execution by analyzing the market microstructure of Bitcoin trade data to develop and implement advanced trading strategies.
- Constructed benchmark execution algorithms in Python, including VWAP and TWAP, to analyze the market impact and transaction costs of trading Bitcoin.
- Engineered a reinforcement learning and neural network architecture (PPO, DDQN) to create an adaptive agent that optimizes trade execution strategies in real-time.
- Modeling quantitative performance using statistical methods and Python (NumPy, Pandas, SciPy) to analyze trade execution efficiency and market dynamics.

PROJECT WORK

Sports Betting Algorithm & Analytics System — August 2024 – May 2025

- Engineered a quantitative sports prediction model using Python (NumPy, Pandas) to identify statistical edges, achieving an 8,400% return on investment (scaled from $10 to $850) over a 6-month period.
- Built a real-time data pipeline with sports APIs (Requests) to ingest and process player statistics (Pandas), enabling probability calculations with SciPy and statsmodels.
- Developed a performance dashboard (Matplotlib, Seaborn) for visual ROI analysis and integrated an automated risk management system to optimize bankroll allocation using the Kelly Criterion.

Momentum Trading Strategy Development — May 2024 - August 2024

- Developed a momentum trading strategy in Python, implementing technical indicators (MACD, RSI) on historical stock data to generate automated buy-and-sell signals.
- Backtested the strategy against a buy-and-hold benchmark, using Pandas for performance analysis and Matplotlib to create candlestick charts visualizing trade signals and returns.

EXTRACURRICULAR

IMC Prosperity 3 | Top 0.005% — April 2025

- Placed 15th in the US out of 12,600 teams in IMC's Prosperity 3 trading competition, designing strategies for multi-asset markets
- Optimized trade execution under latency constraints by engineering fair value estimators (using VWAP, EMA, stochastic modeling) and implementing dynamic bid shading.
- Designed signal-driven market-making strategies by analyzing mean-reversion patterns and synthetic mispricing via EDA (rolling z-scores, spread compression, correlation clustering)

Treasurer, FinTech Club, Virginia Tech, Blacksburg, Virginia — October 2024 - Present

- Manage the club's budget and all financial operations to fund initiatives and workshops for a community of 100+ members.
- Organize and host speaker events with industry professionals from leading finance and technology firms to create career development and networking opportunities.
- Led a faculty-advised research project replicating the foundational Evans & Archer (1968) paper on portfolio diversification using Python simulation.
- Modeled risk versus portfolio size using Pandas, NumPy, and SciPy, and presented findings that confirmed unsystematic risk is substantially mitigated with 10-20 assets.