Varun Srinivasarao Budati

Blacksburg, VA | varunsb@vt.edu | +1 (571)-830-0505 | varunbudati.github.io | linkedin.com/in/varun-budati

EDUCATION

Virginia Tech, Blacksburg, Virginia — August 2023 – May 2027
B.S. in Computer Science — GPA: 3.51/4.0
Minor in Mathematics & Finance — In-Major GPA: 3.65/4.0

COURSEWORK

CS 3114: Data Structures and Algorithms, CS 2505/6: Computer Organization I/II, CS 2114: Software Design & Data Structures

CORE SKILLS

Programming Languages: Python (5 years), MySQL (2years), Java, C/C++, JavaScript, HTML/CSS, x86, Matlab.

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

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

Spoken Languages: English, Hindi, Telugu, Sanskrit.

WORK EXPERIENCE

Incoming MAOP Undergraduate Summer Research Intern, Virginia Tech, Blacksburg, Virginia — May 2025 – July 2025

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

- Collaborating with two researchers on Order Execution & Optimization research, focusing on market microstructure analysis and implementation of trading strategies.
- Constructed execution algorithms in Python, including VWAP (Volume Weighted Average Price) and TWAP (Time Weighted Average Price), to analyze market impact and transaction costs.
- Applied reinforcement learning methods (e.g., PPO, DDQN) using Python libraries to optimize trading strategy execution.
- Modeling quantitative performance using statistical methods and Python (NumPy, Pandas, SciPy) to analyze trade execution efficiency and market dynamics.

Web Developer, Intern, The Amricani Cultural Centre, Kuwait City, Kuwait — June 2021 – September 2021

- Designed and built 5 interactive web-pages for young museum visitors, featuring sequential exhibit zones with QR codes for historical information about Kuwait.
- Produced 8 puzzles and games using cardboard pieces and silhouettes.
- Designed 3 interactive tools like query boards/trivia questions to enhance children's learning of Kuwait and Al-Sabah exhibit history.

PROJECT WORK

Poker Game — January 2024 - March 2024

- Engineered a card handling system using JavaScript arrays and objects to manage a 52-card deck with 4 suits and 13 values.
- Programmed 8 distinct game variants through conditional logic and dynamic paytable adjustments.
- Architectured poker hand evaluation algorithms with O(n log n) time complexity for pattern recognition (pairs, straights, flushes).
- Built responsive UI with CSS Grid and Flexbox layouts, supporting 3 breakpoints for cross-device compatibility.

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

- Formulated a Python-based sports prediction algorithm using NumPy and Pandas for data analysis, achieving ROI by turning $10 into $640 through systematic execution and statistical edge identification.
- Established a real-time data processing pipeline using commercial sports APIs and Requests library, leveraging Pandas DataFrames for efficient player statistics management and SciPy/statsmodels for probability calculations.
- Visualized performance tracking via a dashboard using Matplotlib/Seaborn for analysis of ROI trends and player metrics, while incorporating an automated risk management system for optimal bankroll allocation.

EXTRACURRICULAR

Group Lead, FinTech Club, Virginia Tech, Blacksburg, Virginia — October 2024 - Present

- Led a project under Dr. Daniel Rodriguez replicating Evans & Archer (1968) via Python simulation, analyzing portfolio diversification and risk reduction.
- Utilized Pandas, NumPy, and SciPy on historical stock data to model risk (std dev log returns) vs. portfolio size, quantifying diversification benefits.
- Presented findings confirming that most unsystematic risk is mitigated with 10-20 assets, aligning with the foundational study.