

Varun Budati

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

EDUCATION

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

COURSEWORK

CS 3114: Data Structures and Algorithms, CS 2505/6: Computer Organization I/II, CS 2114: Software Design & Data Structures, CS 3214: Computer Systems

CORE SKILLS

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.

WORK EXPERIENCE

Summer Research Intern, REACH Lab - Virginia Tech, Blacksburg, Virginia	May 2025 – July 2025
<ul style="list-style-type: none">Conducted a 10-week mixed-methods research study analyzing over 24,500 words from introductory Computer Science course materials at MIT, UC Berkeley, and CalTech to identify pedagogical gaps.Developed a qualitative & quantitative coding framework and utilized computational text analysis tools (LIWC-22) to thematically categorize hundreds of programming examples and assess their linguistic context.Synthesized findings to reveal a high prevalence of abstract mathematical problems, providing data-driven recommendations to enhance curricula with more inclusive, real-world applications	
Quantitative Researcher, Dataism Lab for Quantitative Finance - Virginia Tech, Blacksburg, Virginia	October 2024 – Present
<ul style="list-style-type: none">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

Poker Game	January 2024 - March 2024
<ul style="list-style-type: none">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 payable adjustments.Architected poker hand evaluation algorithms with $O(n \log n)$ time complexity for pattern recognition (pairs, straights, flushes).	
Sports Betting Algorithm & Analytics System	August 2024 – May 2025
<ul style="list-style-type: none">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.	

LEADERSHIP/ACTIVITIES

Treasurer, FinTech Club, Virginia Tech, Blacksburg, Virginia	October 2024 - Present
<ul style="list-style-type: none">Manage the club's budget and all financial operations to fund initiatives and workshops for a community of 100+ members.Organized 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.Modeled risk versus portfolio size using Pandas, NumPy, and SciPy, and presented findings that confirmed unsystematic risk is substantially mitigated with 10-20 assets.	