

RAHUL SUNILKUMAR

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Education

University of Virginia

Double B.A. in Mathematics & Economics; Finance Concentration

Aug 2023 – May 2026

Charlottesville, VA

Professional Experience

Accenture Federal Services

Technology Analyst, Analyst Development Program

Jul 2026 – Present

Arlington, VA

- Support Agile delivery for a Department of Defense technology project through RAG model development, Power BI analytics, AI workflow automation, and regression and system testing; build working knowledge of Oracle EBS and Octane (TS Process Ongoing).

Mathesis Technologies

Quantitative Modeling Consultant

Jun 2024 – Aug 2026

- Created 110 quantitative models, including interactive web simulations, plus supporting graphs, web apps, and presentations for a venture-backed spatial education-technology startup; 93 models were integrated into the product.
- Developed models spanning stochastic processes, Black-Scholes, retirement-planning ODEs, numerical methods, physics, and optimization using Python, R, MATLAB, Excel, SQL, yfinance, and Binance market data.
- Audited and corrected 20 of 110 models, approximately 18% of the library, resolving mathematical-assumption issues, code defects, edge cases, and visualization bugs; work was reviewed and accepted internally.

HP Ventures

Venture Capital Extern

Apr 2024 – Aug 2024

- Used SQL, Python, OpenRefine, Excel, and PitchBook to clean and analyze approximately 1,800 AI startups for investment screening and market mapping.
- Evaluated technology companies weekly, produced investment memos and presentations, and presented one company analysis to investment decision-makers.

Investment Research & Projects

Adaptive Bayesian Return Forecasting | *Python, pandas, NumPy, SciPy* | [🔗 Link](#)

Fall 2025

- Implemented a Bayesian return forecaster with precision discounting and rolling observation variance; derived its exponential-smoothing limit and benchmarked against six baselines across 24 ETFs using walk-forward validation.
- Analyzed forecast error and volatility-regime performance; a 20-setting sensitivity study found removing forgetting raised mean asset-level Sharpe from 0.012 to 0.317 before costs at a fixed 50-day variance window.

Empirical Finance Portfolio | *MATLAB, Excel, LaTeX* | [🔗 Link](#)

Spring 2026

- Completed a 33-page, ten-part portfolio covering factor attribution, multi-asset optimization, fixed-income risk, Monte Carlo retirement simulation, option pricing, portfolio insurance, and dynamic hedging.

Portfolio Allocation & Constraint Analysis | *Python, NumPy, SciPy, SLSQP* | [🔗 Link](#)

Fall 2025

- Engineered a monthly walk-forward backtest of five allocation rules across 18 ETFs (2009–2024), using 504-day rolling estimates, constrained optimization, drifting portfolio weights, and turnover-based costs; tested allocation caps and transaction-cost sensitivity.
- Found position and asset-class caps increased minimum-variance net Sharpe from 0.793 to 0.925 at 10 bps trading cost, while reducing mean bond allocation from 75% to 39%; distinguished exposure shifts from volatility reduction.

Honors & Activities

1st Place, Wise Integration Bee; **Final Four Team**, UVA Entrepreneurial Cup; SAT Math **800**

President, UVA Wise Chess Club; helped establish three local school teams and hosted tournaments

Skills & Courses

Programming/Data: Python, SQL, R, MATLAB, Excel, NumPy, pandas, SciPy, yfinance, OpenRefine, LaTeX

Investment Analytics: Portfolio Optimization, Asset Allocation, Backtesting, Risk Modeling, Performance Attribution, Financial Time Series, Derivatives Pricing

Statistical Modeling: Regression, Bayesian Inference, Monte Carlo Simulation, Stata, statsmodels

Coursework: Empirical Finance, Behavioral Finance, Econometric Methods, Stochastic Processes, Derivative Securities, Probability & Statistics