ARYAMAN NAGPAL

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EDUCATION

New York University, College of Arts and Sciences, New York, NY — May 2026
B.A., Double Major in Economics & Mathematics (Honors), and Computer Science; GPA: 3.903
Dean's List: 2022-23, 2023-24, 2024-25
Organizations: Society for Industrial and Applied Mathematics (Member), Stern Investment Analysis Group (Member)
Relevant Coursework: Advanced Macroeconomics • Econometrics • Honors Analysis I • Honors Theory of Probability • Honors Ordinary Differential Equations • Honors Linear Algebra • Numerical Computing • Operating Systems • Algorithms

RELEVANT EXPERIENCE

Quantitative Solutions Intern, **FlexTrade Systems Inc.** — Jun 2025 – Present
- Enabled live arbitrage and slippage analysis by integrating spread and execution feeds into a real-time pairs dashboard
- Implemented tick ingestion via async MongoDB cursors into in-memory arrays with in-stream preprocessing for live plotting
- Applied spline interpolation and struct-packed binary frames to downsample data, reducing browser memory by 60%+
- Ensured <50 ms end-to-end UI updates via lock-safe async broadcasting of incremental binary diffs over FastAPI WebSocket

Research Assistant, **NYU Courant Institute of Mathematical Sciences** — Jun 2025 – Present
- Built a Python ETL pipeline to process macro data, modeling FX vol, real rates & yield spreads under trade shock regimes

Research Analyst Intern, **OmniScience Capital** — Jun 2023 – Aug 2023 • Jun 2024 – Aug 2024
- Developed a Python-based smart beta portfolio system using CRSP/Compustat data for low-frequency alpha generation
- Pioneered the first index tracking large cap chemical companies in India (NSE) by designing a backtesting model in Excel
- Applied CAPM, Beta, VaR & CVaR analyses to quantify portfolio risk exposures, informing trading-desk risk limits

Quantitative Trading Analyst, **NYU Mathematical Finance Group** — Feb 2024 – Present
- Designed a modular Python library for real-time pricing & visualization of 25+ vanilla option strategies and exotics
- Integrated SVI-driven vol surfaces for live Greeks, PnL, breakeven analytics, and mispricing detection against market quotes
- Developed valuation modules for ZCBs, bond options, caplets, floorlets & swaps using bootstrapped zero-coupon yields

Quantitative Research Intern, **New England Investment Consulting Group** — Jan 2024 – May 2024
- Spearheaded the proposal, refinement, and backtesting of a cointegrated U.S. large cap equity pairs trading strategy
- Implemented Python scientific stack (numPy, pandas, statsmodels, scikit-learn) to develop and optimize quantitative models
- Designed an original indicator with RSI, optimizing trade timing for improved risk-adjusted performance (1.462 Sharpe)

LEADERSHIP EXPERIENCE

Undergraduate Course Assistant, **NYU Courant Institute of Mathematical Sciences** — Sep 2024 – Present
- Grading weekly homework assignments and exams for Theory of Probability, Calculus II, and Discrete Mathematics

AP Calculus & Digital SAT Online Instructor, **The Princeton Review** — Sep 2023 – Feb 2025

Captain, **Varsity Cross Country, Singapore American School** — Aug 2021 – May 2022
- Achieved team gold in the Interscholastic Association of South-East Asian Schools (IASAS) competition in Manila

HONORS AND AWARDS

Cubist Systematic Strategies Hackathon Team Gold, *Point72* — Apr 2024
- Developed a CLI in Python that formulates real-time tradeable contracts for MTA subway train timings ($10k prize)

National Merit Scholar, *United States National Merit Scholarship Corporation* — Feb 2022
1600 SAT (Perfect Score), *College Board* — Aug 2021

CERTIFICATIONS AND SKILLS

Term-Structure and Credit Derivatives • Optimization Methods in Asset Management, *Columbia University* — Aug 2023
Bloomberg Market Concepts • Bloomberg Environmental Social Governance — Jun 2023
Computer: Python, C, C++, Java, MATLAB, SQL, R, Microsoft Excel, Bloomberg Terminal