Tanishk Yadav

tanishkyadav@nyu.edu | (646) 533-4214 | New York, NY | tanishkyadav.me | LinkedIn | GitHub

EDUCATION

New York University, Tandon School of Engineering — Brooklyn, NY
Master of Science in Financial Engineering — 05/27

- Coursework: Derivative Securities, Econometrics & Time Series, Algorithmic Trading & HFT, Credit & Financial Risk Management, Valuation; Stochastic Calculus (Fall 2026). GRE 324 (Quant 168, top 3%)

SRM University (100% merit scholarship, GPA 3.8/4.0) — Amaravati, India
B.Tech in Computer Science & Engineering (AI & Machine Learning) — 06/25

- Coursework: Linear Algebra, Multivariable Calculus, Differential Equations, Probability & Statistics, Data Structures & Algorithms

EXPERIENCE

New York University, Tandon (with Prof. David Shimko) — New York, NY
Quantitative Research & Teaching Assistant — 06/26 - present

- Contributing to *Valuation Principles* (Wiley, forthcoming), Prof. Shimko's graduate valuation textbook: editing and developing chapter content, drafting worked additions, and building the authoring/publishing toolchain
- Appointed Teaching Assistant for FRE-GY 6103 (Fall 2026), the graduate course built on the textbook

IUDX (India Urban Data Exchange) — Bengaluru, India
Summer Intern, Framework Development — 06/23 - 08/23

- Built a secure cross-platform digital consent collector (SHA-256 hashing) in a 4-person team, enabling 38 government datasets on the ADeX platform (a government-academia joint venture) in full regulatory compliance

PROJECTS

Regime-Aware Fundamental Strategy & Point-in-Time Engine | *Python, HMM, SEC EDGAR*

- Built a walk-forward HMM fundamental factor strategy (2008-2026) on point-in-time SEC fundamentals: 4-state regime-conditional sizing over a 4-factor composite (ROIC, leverage, FCF margin, revenue growth) with delisting survivorship controls
- Fama-French 5-factor attribution documents alpha decay: a significant **8.37% net-of-fee alpha** (t=2.73, p=0.006) in the first half (2008-17) decays to an insignificant 2.42% over the full period (p=0.365); the net edge over SPY traces to beta (0.85), not residual alpha

VolEdge: Volatility Trading & Distribution Analytics Platform | *Python, FastAPI, React*

- Built a full-stack options/volatility platform on a risk-premium (Q vs P) thesis: extracts Bakshi-Kapadia-Madan model-free risk-neutral moments from live chains vs GMM physical moments; Greeks/IV computed locally via Brent-root Black-Scholes, key-free
- Validated on real data, net of costs: a GARCH vol-managed sleeve (2020-24) returned **Sharpe 0.85 vs SPY 0.68** (max drawdown −19.7% vs −33.7%); walk-forward optimizer with AST-sandboxed execution and strict $t-1$ boundaries

Regime-Adaptive Sector Portfolio | *Python, Scikit-Learn, Walk-Forward*

- Designed a 4 orthogonal stress-detector system (Page CUSUM, rolling correlation, breadth, Fisher skewness) with a max-of-top-2 fuzzy consensus requiring two detectors to agree before de-risking; all parameters trained out-of-sample
- Capital-preservation overlay (2009-2025): max drawdown **−6.2% vs SPY −41.71%** at 4.6% vol; same calibration generalizes cross-asset (Sharpe 1.21 on factor portfolios, 1.04 on international equities vs 0.51 / 0.11 equal-weight)

S&P 500 Sector Connectedness (Time-Series Econometrics) | *Python, Statsmodels (VAR)*

- Measured return spillover across 11 GICS sectors via Diebold-Yilmaz (2012) generalized connectedness (VAR/GFEVD) on ∼1,590 daily observations: **Total Connectedness Index 78.6%**, peaking at 87.0% in June 2020 (Industrials/Financials net transmitters, Energy net receiver)
- Multiple-testing-corrected Granger causality (Benjamini-Hochberg FDR, Bonferroni): 88/110 sector pairs FDR-significant, correcting a naive uncorrected screen where 0 relationships survived multiple-comparison control

ChronoFund: Point-in-Time Fundamental Data Engine | *Python, SEC EDGAR, XBRL, pytest*

- Architected a production-grade SEC EDGAR + XBRL data engine enforcing zero lookahead bias at 4 independent layers, each gated by `acceptance_datetime` assertions for second-level point-in-time precision; **65 unit tests**
- Custom `CutoffViolationError` makes any lookahead crash at parse time (not backtest time); token-bucket SEC rate limiting, typed Parquet schemas, and survivorship-aware coverage tracking with no forward-fill

TECHNICAL SKILLS

- **Languages:** Python, C++, SQL, R
- **Libraries:** Pandas, NumPy, SciPy, Statsmodels, Scikit-Learn, hmmlearn, FastAPI, React, pytest
- **Quant & Financial:** Options Pricing (Black-Scholes, Greeks, Implied Vol), BKM Model-Free Risk-Neutral Moments, Volatility Risk Premium, Regime Switching (HMM/GMM), Fama-French Factor Models, Diebold-Yilmaz Connectedness, Point-in-Time Data Engineering, Walk-Forward Validation
- **Tools:** Bloomberg Terminal, Git, LaTeX, Docker, Jupyter
- **Certifications:** Bloomberg Market Concepts, Akuna Capital Options 101, Financial Markets (Yale, Honors)