

Vatsal Maniar

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SUMMARY

M.S. Financial Engineering candidate with a Computer Science background building quant systems across FX options, stochastic rates, and portfolio risk. Applied Garman-Kohlhagen, QuantLib validation, Monte Carlo VaR/ES, DV01/key-rate attribution, and crisis-regime backtesting in Python.

EDUCATION

Stevens Institute of Technology

M.S. Financial Engineering | GPA: 3.67/4.00 | Graduate Certificate: Financial Risk Engineering
Coursework: Advanced Derivatives, Stochastic Calculus, Derivatives Pricing & Hedging,
Computational Finance, Market Microstructure, Portfolio Theory

Hoboken, NJ

Sep 2025 – Dec 2026

Arizona State University

B.S. Computer Science | GPA: 3.74/4.00 | Magna Cum Laude

Tempe, AZ

Aug 2021 – May 2025

PROJECTS

FX Options Risk Lab | fxrisklab.netlify.app | Python, QuantLib, NumPy, SciPy

- Cross-validated USD/MXN Garman-Kohlhagen call/put valuations and position-level Greeks against QuantLib to machine precision across an 11×7 spot/volatility stress grid.
- Quantified 99% VaR and Expected Shortfall with 10,000 Monte Carlo paths under joint spot/implied-volatility shocks, attributing scenario P&L to Greek exposure and residual risk drivers.

Inflation Regime Rates Risk Engine | yieldshock.netlify.app | Python, NumPy, SciPy

- Mapped 12 FRED macro/rates series into 6 Treasury-style instruments and 200 shock-book-overlay combinations to quantify curve, inflation, and hedge-recovery risk across rate regimes.
- Attributed rates-driven P&L to duration, convexity, key-rate DV01, real-rate, breakeven, and residual components, with 10,000-path Vasicek/CIR VaR/ES simulation for tail-risk measurement.

Portfolio Risk & Allocation Analytics | pra-analytics.netlify.app | Python, NumPy, SciPy

- Benchmarked Equal Weight, GMV, Max Sharpe, and regime-aware allocation rules across 13 ETF proxies, SPY, and a 60/40 benchmark with monthly rebalancing and 35% per-asset caps.
- Stress-tested portfolio behavior through 2008, 2020, and 2022 crisis windows, measuring VaR/CVaR, drawdown, 5 bps transaction-cost drag, turnover, and Fama-French 3-factor exposure.

ApexGP Markets | apexgp-markets.netlify.app | Python, FastF1, Recharts

- Simulated 500+ Formula One event-market contracts across 24 races with 1-second price-update cadence, processing contract repricing, order-flow signals, race-state changes, and championship futures logic across each event cycle.
- Calibrated trading-risk controls around a \$100K bankroll, sub-100ms state-refresh target, mark-to-market P&L, exposure limits, Sharpe/drawdown analytics, and transaction-level audit trails across 24 race events.

EXPERIENCE

Alcove Ridge Consulting / Private-Markets.io

Sep 2024 – Jun 2025

Software & Platform Development Intern

Remote

- Reduced reporting-preparation time by an estimated 30–40% by converting 4 private-markets workflows into sponsor-reviewable dashboards covering deal review, performance views, fund administration, and platform oversight.
- Connected React/Next.js modules to Prisma/PostgreSQL data flows across 15+ sprint cycles, enabling role-based MVP workflows for investors, sponsors, brokers, and administrators across 4 operating modules.

ASU Capital Assets Management Office

May 2024 – May 2025

Asset Management Specialist

Tempe, AZ

- Validated \$1.5B in institutional asset records using Excel-based reconciliation checks and system exports, maintaining 99.9% data accuracy across financial, location, ownership, and sponsor-funded classifications.
- Flagged documentation and classification gaps across 1,000+ high-value assets above the \$5K threshold, improving asset-record integrity for internal-control review and sponsor-funded asset tracking.

CERTIFICATIONS

GARP Financial Risk Manager (FRM) Part I Candidate, Aug 2026 | **CME Group** Introduction to SOFR

TECHNICAL SKILLS

Languages: C++, Java, Python (NumPy, pandas, SciPy, scikit-learn, Matplotlib, QuantLib), R, SQL, MATLAB, VBA

Quantitative Finance: Derivatives Pricing (Garman-Kohlhagen, Black-Scholes), Options Greeks, Delta/Vega Hedging, P&L Attribution, Monte Carlo Simulation, Stochastic Modeling (Vasicek, CIR, GBM), VaR/CVaR, Expected Shortfall, Stress Testing, Portfolio Optimization (MVO, GMV, Max Sharpe), Fixed Income Analytics, Duration, Convexity, DV01, Key-Rate DV01, Backtesting, Scenario Analysis

Platforms & Tools: Bloomberg Terminal, Capital IQ, LSEG Workspace, Excel/VBA, Power BI, Git/GitHub