Prakhyath S

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EDUCATION

Stevens Institute of Technology Hoboken, NJ
Master of Science in Financial Engineering (STEM|GPA: 3.84/4.0) September 2022 – May 2024
Relevant Coursework : Portfolio Optimization, Financial Derivatives (Futures, Forward, Swaps, and Option Pricing), Credit Risk Modelling, Yield Curve, Duration, Convexity, Quantitative Risk Management (VaR, Expected Shortfall, SR 11-7, SR 15-18, Basel III, CCAR, Stress Testing), Mathematical Finance (Monte Carlo Simulation, Black-Scholes, Binomial Option Pricing, and Stochastic Processes.

PES University Bengaluru, India
Bachelor of Engineering in Mechanical Engineering June 2015 – June 2019
Relevant Coursework : Management and Engineering Economics, Financial Management, Operations Research.

SKILLS

Technical Tools: C++, Python, R, MATLAB, SQL, HTML/CSS, JavaScript, Excel-VBA and Bloomberg.
Certification: Bloomberg Terminal, Algorithmic Trading - EPAT , Graduate Peer Mentor, Fire Safety, Ashtanga Yoga.

EXPERIENCE

Stevens Institute of Technology September 2022 – May 2024
Teaching Assistant Hoboken, NJ

- Created a fully automated options trading strategy focusing on delta-gamma neutrality for a $10 million portfolio, incorporating volatility as a critical factor in strategy formulation and risk assessment.
- Employed GARCH models for volatility forecasting to enhance strategy adaptability to market conditions
- Conducted thorough backtesting on historical data to evaluate strategy performance using risk measures and performance metrics including Value-at-Risk (VaR) and Expected Shortfall (ES)
- Deployed successfully in a live trading environment, generating a stable annual net return of 20% with Sharpe Ratio of 2.17 and Sortino Ratio of 5

Ebullient Securities Pvt Gurugram, India
Quantitative Research Analyst October 2021 – June 2022

- Developed quantitative models for fixed income futures, enhancing trading strategies and risk management generating over $5 million annually
- Implemented statistical methods(ADF test, auto-correlation, Z-Score analysis) and machine learning (linear regression, non-linear regression etc) techniques to develop trading strategies
- Developed risk assessment frameworks using Value at Risk (VaR), stress testing, and sensitivity analysis
- Collaborated with trading teams to optimize trading strategies and manage portfolio risk, achieving a 25% improvement in risk-adjusted returns

PROJECTS

QWIM (Capstone Project with Bank of America) | Python, CVXPY, SciPy February 2024 – May 2024

- Engineered and assessed three advanced portfolio construction models using network analysis, negative skewness, and machine learning techniques, resulting in a 5% improvement in investment decision-making processes.
- Optimized portfolio performance, significantly boosting key metrics in portfolio management such as risk-adjusted return, diversification, and dynamic asset allocation.
- Achieved annualized returns of 10.78% for machine learning, 9.34% for negative skewness, and 6.07% for network analysis, markedly exceeding the minimum variance benchmark of 4.67%.

Mathematical Modeling for Option Pricing and Greeks for Risk Management March 2023 – April 2023

- Engineered and applied the Black-Scholes, Heston, Binomial Tree, and Monte Carlo Simulation Models to determine European option pricing, achieving precise and efficient computation of prices under different market scenarios
- Assessed the Greeks (Delta, Gamma, Theta, Vega, and Rho) to measure option price sensitivity to underlying variable fluctuations, offering critical insights for risk management and hedging techniques
- Upgraded model capabilities by integrating real-time market data, enabling dynamic recalibration of option prices and Greeks, which enhanced decision-making for trading and risk mitigation

Market Risk Quantification with Value at Risk (VaR) Modeling September 2023 – December 2023

- Developed an extensive VaR model employing Variance-Covariance, Historical Simulation, and Monte Carlo methods to assess market risk for a $10M equity portfolio. VaR calculations were performed at confidence levels of 97.5% and 99% for multiple time horizons
- Executed thorough backtesting of the VaR model to confirm its precision and predictive capacity across different confidence intervals and durations, ensuring adherence to industry norms and regulatory requirements
- Applied stress testing scenarios to evaluate the portfolio's stability under extreme market conditions, thereby strengthening the overall risk management and mitigation framework