Amol Sharma

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Portfolio (GitHub) LinkedIn HackerRank

Aspiring finance professional with an engineering background and expertise in quantitative methods. Passionate about derivatives and risk management, and open to opportunities in financial analysis and quantitative research.

Academic Record

eMasters Quantitative Finance & Risk Management	July, 2024	Indian Institute of Technology, Kanpur	9.5
MTech Structural Dynamics & Earthquake Engineering	2016	Visvesvaraya National Institute of Technology, Nagpur	7.89
BE Civil Engineering	2014	Jabalpur Engineering College	7.5
Class XII	2009	Marble Rock School (CBSE)	72.4%
Class X	2007	Christ Church Boys Senior Secondary School (CBSE)	82.2%

Certifications

- NISM Series 12 – Securities Market Foundation Certification Examination
- NISM Series 8 – Equity Derivatives Certification Examination
- NISM Series 4 – Interest Rate Derivatives Certification Examination
- NISM Series 1 – Currency Derivatives Certification Examination
- NISM Series 16 – Commodity Derivatives Certification Examination
- NISM Series 7 – Securities Operations & Risk Management Certification Examination
- NSE NCFM Derivatives (Advanced) Module
- Probability & Statistics for Business & Data Science (Udemy)
- The complete SQL Bootcamp (Udemy)
- The complete Python Bootcamp (Udemy)
- Python for Machine Learning & Data Science Masterclass (Udemy)
- Quantitative Financial Modelling in Microsoft Excel (Udemy)

Key Skills

Programming: Python (NumPy, Pandas, Matplotlib, Seaborn, Scikit Learn), Jupyter Notebook, SQL, Excel (Macros &VBA).

Data Analysis: Feature Engineering, Unsupervised Learning (Clustering, DBSCAN, Principal Component Analysis).

Modelling: Regression, Classification, Time Series Analysis, Volatility Forecasting, Option Pricing Models, Hedging.

Risk Management: Portfolio Theory & Asset Pricing Models, Market Risk (Value at Risk, Expected Shortfall, Derivatives Risk).

Relevant Coursework

- Foundation of Economics & Finance
- Intro. to Derivatives Contracts
- Quantitative Methods in R & Python
- Treasury & Credit Risk Mgmt.
- ML in Financial Modelling
- Security Analysis & Portfolio Mgmt.
- Advanced Financial Modelling
- Technical Analysis in Finance
- Advanced Derivative Contracts & Pricing

Projects

1. Option Valuation: Black Scholes v/s Binomial v/s Monte Carlo

- Conducted option pricing for Tata Steel options using the three methods in Python; analysed pricing discrepancies and volatility smiles and compared implied volatility with historical volatility to identify undervalued and overvalued options.
- Modelled dynamic delta hedging for ATM call options using the 'Python in Excel' feature and examined option Greeks' variation with underlying price and time, deriving actionable insights for risk management.

2. Dynamic Volatility Forecasting for Risk Management & Derivatives Valuation: EWMA & GARCH (1,1) approaches.

- Forecasted NIFTY 50 volatility using EWMA and GARCH models, validating with econometric tests.
- Priced near-month call and put options on NIFTY 50 using forecasted volatility, including implied volatility calculations.
- Calculated VaR for a single stock portfolio, projecting risk over specified horizons and confidence intervals.

3. Conducted a **Secondary Research Report on Zero-Day-to-Expiry (0DTE) Options**, analysing media perspectives, associated volatility patterns (VIX1D Index), retail trading trends, and regulatory challenges. Highlighted implications for market stability and emphasized on the necessity for regulatory oversight to balance innovation with risk mitigation.

Work Experience

F2S Foundation to Structures, Noida — Structural Engineer (On Contract) — Aug22 – Present (2Yrs. 6Mos.)

Kalmegh Infratech Solution, Raipur — Consultant (On Contract) — Aug18 – Present (6Yrs. 6Mos.)

- Spearheaded the supply, erection and commissioning of low-tension (LT) electricity distribution lines in CG rural areas.
- Performed seismic analysis and wind load modelling for structures to ensure their safety and compliance with relevant engineering standards.