KRISHNA SINGHAL

Quantitative Analyst · Algorithmic Trading · Financial Research

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PROFESSIONAL SUMMARY

Finance final-year student with **3 NISM certifications** (Equity Derivatives, Commodity Derivatives, Research Analyst) and deep hands-on experience building **quantitative trading systems from scratch**. Independently engineered a multi-strategy ensemble achieving a **1.94 Sharpe ratio and 43.7% CAGR** over 5 years on NSE equities across 4,000+ instruments. Built and backtested **10+ options selling strategies**, a **live paper-trading bot** integrated with Zerodha API, and **ML-driven stock prediction pipelines**. Proficient in Python, statistical modelling, stochastic calculus, derivatives pricing, and financial modelling. Seeking a quantitative analyst, trading, or financial engineering role.

QUANTITATIVE & TECHNICAL PROJECTS

Multi-Strategy Quantitative Trading Engine   *Python, Pandas, NumPy, SciPy, Scikit-Learn, Statsmodels*

- Architected a modular quant platform with **alpha generation, regime detection, backtesting, and portfolio optimization** modules spanning 13 sub-packages and 30+ source files.
- Implemented **4 uncorrelated strategies** — Cointegration-Based Pairs Trading (674% return), Diffusion Momentum (Sharpe 1.92), Transfer Entropy Network Rotation, and Dynamic Ensemble — best ensemble achieved **Sharpe 1.94, CAGR 43.7%, max drawdown 11.3%**.
- Built a math/physics layer using **Stochastic Differential Equations, Information Theory, Statistical Mechanics, and Network Analysis** for cross-asset alpha generation.
- Validated system integrity with **653 unit tests** at 74–93% code coverage across 4,000+ stock parquet files (5 years of NSE data).

Options Selling & IV-Adaptive Strategy Framework   *Python, Black-Scholes, Greeks, Implied Volatility Modelling*

- Designed a backtesting engine supporting **10 options strategies**: Short Straddle, Short Strangle, Iron Condor, Jade Lizard, Ratio Spread, IV-Adaptive, Long Straddle/Strangle — each with configurable Greeks and expiry parameters.
- Built custom **IV engine, margin calculator, execution simulator, and portfolio-level P&L aggregator** with realistic slippage and transaction cost modelling.

Live Algorithmic Paper Trading System   *Python, Zerodha Kite API, SQLite, Telegram Bot API*

- Built an end-to-end **live paper-trading bot** with real-time signal generation, automated order management, and **Telegram alerting** — deployed on a personal server for continuous monitoring.
- Developed orchestrator, live data pipeline, database logger, multi-strategy runner, and dashboard for **breakout and pairs trading strategies**.

ML-Driven Multibagger Stock Prediction Pipeline   *Python, Scikit-Learn, Feature Engineering, XGBoost*

- Developed a machine learning pipeline for identifying potential multibagger stocks using **fundamental + technical features** across 500+ NSE equities.
- Implemented end-to-end workflow: data ingestion, feature extraction, labelling, model training, prediction, and paper-trading validation.

Mini Game Hub — Published Mobile App   *Flutter, Dart, Firebase, Google AdMob*

- Built and published a **cross-platform gaming app** with 8 games (2048, Minesweeper, Snake, Solitaire, Sudoku, etc.), in-app coin economy, and **Google AdMob monetization** — 30+ files, released on Play Store.

PROFESSIONAL EXPERIENCE

Investment Analyst · Navneet Education Limited   *Jul 2025 – Aug 2025*

- Built **financial models** evaluating ₹10+ Cr capital projects; performed **IRR, NPV, and payback period** calculations for 5+ internal and subsidiary-level ventures.
- Benchmarked strategic returns from K-12 Techno Services, BeGalileo, and Tinkerly to support capital allocation decisions.

Financial Analyst Intern · EqCap Group   *May 2025 – Jul 2025*

- Conducted **equity research** on 10+ listed companies using **DCF, comparable company analysis, and financial ratio**

analysis.
- Interpreted balance sheets, income statements, and cash-flow statements; tracked macro trends to assess risk exposure.

Financial Market Research Intern · A. S. Commodities Pvt. Ltd.   *May 2024 – Jul 2024*
- Analysed **options trading trends across 50+ contracts**; assisted in backtesting and development of derivatives trading strategies.
- Monitored economic events impacting commodity pricing, volatility, and trading volume.

Co-Founder & CFO · Kaamback (Startup)   *Nov 2023 – Jun 2024*
- Co-founded a workforce platform connecting **40+ professionals** with flexible opportunities; managed ₹50K budget and financial operations.

EDUCATION

BBA (Finance) · NMIMS, Navi Mumbai   *2023 – 2026 (Anticipated May 2026) · CGPA: 3.24 / 4.0*
Class XII (CBSE) · Little Angels High School   *2022 · 92.2%*
Class X (CBSE) · Little Angels High School   *2020 · 86.2%*

CERTIFICATIONS

- **NISM-XVI**: Commodity Derivatives (2025)
- **NISM-XV**: Research Analyst (2025)
- Financial Modelling & Valuation — Excel (2025)
- **NISM-VIII**: Equity Derivatives (2025)
- The Complete Python Developer — Udemy (2025)

TECHNICAL SKILLS

Programming	Python, Dart/Flutter, Pine Script, SQL, HTML/CSS/JS
Quant & Analytics	Pandas, NumPy, SciPy, Scikit-Learn, Matplotlib, Statsmodels, Stochastic Calculus, Monte Carlo, Time Series Analysis
Finance	DCF, IRR/NPV, Financial Modelling, Options Pricing (Black-Scholes), Greeks, IV, Backtesting, Statistical Arbitrage, Alpha Generation
Platforms	Zerodha Kite API, TradingView, Power BI, Excel (Advanced), Git/GitHub, Firebase, Jamovi, Orange
Languages	English (Fluent), Hindi (Native)

LEADERSHIP & RESEARCH

Co-Founder · InsightKnox (Equity Research Platform)
- Published **20+ equity and macroeconomic research reports**; content reached **200K+ accounts, 340K+ views, 5K+ interactions**. Managed 50+ member team.

Vice President · E-Cell, NMIMS Navi Mumbai   *Aug 2024 – May 2025*
- Led operations, organized entrepreneurship events, and coordinated faculty engagement across the campus.

Core Member · E-Cell, NMIMS Navi Mumbai   *Aug 2023 – Jun 2024*
- Launched the E-Cell newsletter reaching **4,500+ student subscribers**; built an automated Discord server with 100+ active members.