AMIT TOMAR

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OBJECTIVE

Quantitative researcher with 7+ years at the intersection of machine learning, software engineering, and financial markets. Experienced in building large-scale financial data systems, risk analytics, and algorithmic trading frameworks. Seeking to design, backtest, and deploy predictive models and quantitative strategies that uncover alpha across global markets.

EXPERIENCE

Quantitative Research Summer Analyst

May 2025 – Aug 2025

University of Illinois Urbana-Champaign

Champaign, IL

- Conducted quantitative research with Prof. Tony Zhang to identify structural and behavioral factors influencing crypto-asset returns using Farcaster network data.
- Built Python-based factor models integrating on-chain activity, sentiment divergence, and network centrality, validated predictive power via cross-sectional regressions and rolling backtests.
- Applied time-series models (ARIMA, GARCH) & ML feature engineering to extract statistically significant trading signals.

Quantitative Researcher / HFT Strategy Developer

Apr 2022 – Present

Personal Portfolio (Self-Directed)

Mumbai, India

- Designed and implemented low-latency options and index strategies leveraging Zerodha's REST/WebSocket APIs for real-time execution and market microstructure research.
- Developed stochastic-simulation and Monte Carlo frameworks to evaluate Sharpe, drawdowns, and parameter robustness across varying volatility regimes.
- Generated alpha via volatility arbitrage & execution optimization, won Zerodha's 60-Day Trading Challenge 3 times.

Module Lead - Financial Data Systems

May 2022 - Dec 2023

IDfy (Al-Driven Risk & Identity Infrastructure for Financial Institutions)

Mumbai. India

- Led a cross-functional team building distributed ML pipelines and financial data APIs for banks, insurers, and regulators, serving 5M+ monthly requests with 99.99% uptime.
- Engineered scalable systems for KYC/AML analytics, credit-risk modeling, & fraud detection using Python & C++
- Deployed ensemble and probabilistic classifiers improving risk-assessment accuracy by 9% across financial datasets.

Senior Financial Machine Learning Engineer **IDfy**

Jun 2018 – Apr 2022 Mumbai, India

- Developed production-grade ML infra enabling real-time credit scoring & transaction anomaly detection for BFSI clients.
- Implemented distributed training and retraining pipelines using Python, TensorFlow, and RabbitMQ to maintain live model adaptation and monitoring.
- Collaborated with data scientists & business analysts to translate quantitative insights into financial risk models.

SELECTED RESEARCH PROJECTS

Multi-Asset Predictive Modeling Framework

Mar 2025 - Sep 2025

- Built a multi-factor AI agent for equity and ETF prediction using LSTM-based forecasting, reinforcement learning, and macro-signal fusion.
- Developed a modular backtesting engine in Python to simulate dynamic asset selection & portfolio optimization.
- Integrated Bayesian optimization for parameter tuning to maximize Sharpe ratio & reduce volatility clustering.

Systematic Options Strategy Automation

Jan 2025 - Jul 2025

- Created a probabilistic options strategy exploiting implied-volatility decay and gamma exposure on expiry days.
- Implemented asynchronous tick-data ingestion & order routing with 30% latency reduction through parallel computation.
- Backtested 5-year rolling strategies achieving Sharpe > 2.0 and stable PnL under varying market regimes.

EDUCATION

University of Illinois Urbana-Champaign, Gies College of Business

Champaign, IL

Dec 2025

Master of Science in Finance

Indian Institute of Technology (IIT) Bombay B.Tech in Aerospace Engineering

Aug 2018

Mumbai, India

TECHNICAL SKILLS

Programming Quantitative Methods Trading Systems Tools

Python, C++, R, MATLAB, SQL, TensorFlow, PyTorch

Statistical Modeling, Time-Series Forecasting, Stochastic Processes, Portfolio Optimization Algorithmic Trading, Alpha Research, Backtesting, Risk Modeling, Market Microstructure

Bloomberg Terminal, Git, Docker, Linux, Zerodha API, TradingView