Shubham Singh

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SUMMARY: Quantitative Researcher specializing in statistical modeling, machine learning, and deep learning. Developed and backtested predictive pricing models and algorithmic trading strategies; built robust trading systems and risk frameworks; and engineered scalable ML pipelines from data ingestion and feature engineering to AI model training and real-time deployment.

EDUCATION

New York University, M.S. in Computer Engineering — Sep 2023 – May 2025
Relevant coursework: Algorithmic Trading; Probability; Stochastic Calculus; Machine Learning; Deep Learning
Bharati Vidyapeeth University, B.S. in Computer Science — Jul 2019 – Jun 2023

WORK EXPERIENCE

Quant Researcher Lead, GoQuant | Jun 2024 – Jun 2025

- Directed alpha research initiatives, deploying systematic futures and options strategies while architecting execution engines and quantitative pricing models.
- Designed and implemented intelligent smart-order-routing systems that optimize venue selection, minimizing market impact, slippage, and transaction fees.
- Built interactive, real-time dashboards and visualizations for market-data analytics, P&L monitoring, and performance-attribution insights.
- Developed and maintained Python-based RESTful APIs and high-throughput WebSocket services for the GoTrade platform, enabling seamless OEM integrations and scalable, low-latency market-data delivery and execution.

Data Science Intern, UNDP | Jul 2022 – Jan 2023

- Forecasted crop yields using satellite imagery and climate data; presented actionable insights that informed resource allocation and saved $4M.
- Developed NLP workflows to extract trending topics from social media; delivered executive summaries and visualizations to senior UN stakeholders.

PROJECTS

Crypto Price Prediction using LSTM-Transformers

- Processed and cleaned 800 features, applied normalization and univariate Kalman filtering to remove noise.
- Engineered new features, applied OLS-based feature selection to eliminate insignificant features and applied PCA to reduce dimensionality and mitigate collinearity.
- Architected and trained a LSTM–Transformer model for price forecasting using cleaned features.
- Monitored model performance via Pearson correlation, MSE, and R^2 metrics, and implemented custom loss functions to heavily penalize outlier prediction errors and align faster.
- Managed end-to-end preprocessing and modeling pipeline to enhance predictive robustness and maintain scalable, reproducible workflows.

Sentiment-Based Risk-Neutral Equity Strategy

- Built a sentiment-driven trading strategy using FinBERT processing 20GB of stock news daily across equity pairs in the same industry with an 18% annual return.

Pairs Trading Strategy

- Engle-Granger cointegration to identify stationary equity pairs; optimized rolling Z-score thresholds via backtests achieved Sharpe 4.1, annualized return 11%.

SKILLS

Programming & Data: Python, C++, SQL, MS Excel/ VBA, Pandas, Numpy, Pytorch, REST APIs
Analysis & Visualization: Statistical modeling, time-series analysis, Matplotlib
Machine Learning: Model training, feature engineering, data preprocessing, NLP pipelines

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PUBLICATIONS

- Singh, S. & Bhat, M. (2024). Transformer-based Ethereum Price Prediction. arXiv:2401.08077.
- Wang, T. & Singh, S. (2024). Autoencoders for Factor Models. arXiv:2408.02694.
- Singh, S. (2024). Market Risk Factors for Bitcoin. arXiv:2406.19401.