Mancharla Roshan Reddy

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SUMMARY

Quantitative researcher and AI/ML engineer with a B.E. in Computer Science (AI & ML), 4+ years of active market experience, and an NISM-certified Research Analyst credential. Designed and out-of-sample walk-forward tested three live systematic equity strategies on the NSE 500 (CAGRs of 31–49%, Sharpe up to 1.91), and built agentic AI systems — multi-agent workflows on locally hosted and fine-tuned LLMs with hybrid vector + graph retrieval. Fluent in Python, Pandas/NumPy, full-stack backtesting infrastructure and multi-source data pipelines with automated fallback and preprocessing. Pair statistical and factor-modeling rigor with production-grade ML engineering and data analysis.

SYSTEMATIC TRADING STRATEGIES (SELF-DEVELOPED, LIVE SIGNALS)

- **QARP – Quality at a Reasonable Price (NSE 500):** OOS walk-forward CAGR 44.9%, Sharpe 1.83, Sortino 2.22, Calmar 1.68; self-audited Sharpe 2.41→1.83 for verified integrity.
- **Momentum Leaders – trend-gate & regime-defense filters:** OOS CAGR 31.1%, Sharpe 1.19 across a 10.25-year window; 41% CAGR in normal regimes.
- **Smallcap Alpha – factor selection in the ₹500–20,000 Cr band (~170 names):** OOS CAGR 49.0%, Sharpe 1.91, Sortino 2.28, Calmar 2.24 with strict liquidity screening.

AI / ML & QUANT PROJECTS

- **AI Legal Advisory Agent (Ollama, Chroma + InLegalBERT, Neo4j, FastAPI):** Built a multi-agent Classifier→Reasoner→Executor→Critic workflow on locally hosted LLMs that classifies a case's practice area and retrieves grounded statutes/precedents via vector search and Neo4j graph expansion (CITES/RELATED_TO), with a constitution-checked critic and human-in-the-loop APPROVE/REJECT/REVISE review over a FastAPI JSON API to help lawyers draft case strategy and arguments.
- **LLM Fine-Tuning & AI Agent Orchestration:** Fine-tuned and orchestrated locally hosted and custom LLMs to power agentic, multi-step automation and local AI workflows.
- **Quant Strategy Backtest Terminal (React, FastAPI, MongoDB, Python):** Full-stack backtesting platform with sandboxed Python execution, equity-curve/drawdown analytics and Monte Carlo simulation via Pandas/NumPy and yfinance, serving US and NSE markets with optimized data caching.
- **Multi-Source Data Pipeline Engineering:** Engineered an end-to-end fundamental-data pipeline ingesting multiple sources with automated fallback and preprocessing for downstream modeling.
- **Quantitative Market Research:** Analyzed 55+ NSE indices across 3/5/7-year risk-return profiles in Python (Pandas, Plotly) and built/backtested a top-decile Nifty 200 momentum portfolio on historical data.

EXPERIENCE

Financial Operations Analyst — NITCO Outsourcing Pvt. Ltd. *May 2025 – Mar 2026*

- Automated reconciliation and reporting workflows to cut balance-sheet close from 5 to 2 days; analyzed vendor and spend datasets to surface ₹12.4L in redundant spend and 18% working-capital gains, and improved accounts-payable efficiency 20%.

Financial Operations Analyst Intern — NITCO Outsourcing Pvt. Ltd. *Mar 2025 – May 2025*

- Performed project-level financial data analysis and streamlined invoice-tracking workflows to improve data accuracy across verticals.

EDUCATION

B.E. Computer Science (AI & ML) — Sathyabama Institute of Science and Technology *May 2025*

CGPA 8.51/10 | Coursework: Machine Learning, Deep Learning, NLP, Computer Vision, Big Data Analytics

CERTIFICATIONS

Certifications: NISM Research Analyst (RA), SEBI-recognized (61%) • Deep Learning Specialization (2024) • Machine Learning Specialization (2024) • Machine Learning & Reinforcement Learning in Finance — NYU (2026) • Financial Engineering & Risk Management — Columbia (2026) • Investment & Portfolio Management (2026) • Google Data Analytics (2024)

TECHNICAL SKILLS

AI / ML: LLM fine-tuning, AI agent orchestration, agentic workflows, RAG (vector + graph retrieval), locally hosted LLMs, deep learning, NLP, reinforcement learning

Quant: Backtesting, factor modeling, walk-forward validation, Monte Carlo simulation, portfolio optimization, risk management, equity valuation

Programming: Python, R, SQL (MySQL), JavaScript (React, Next.js)

Data & Tools: Pandas, NumPy, Plotly, Tableau, data pipelines, FastAPI, MongoDB, Neo4j, Chroma, Git, Excel