Adarsh Pandey

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY
Master of Engineering in Financial Engineering, *GPA: 3.91/4*   **Expected Dec. 2025**

Indian Institute of Technology, Dhanbad, India
Bachelor of Technology in Mining Engineering, *GPA: 8.1/10*   **June 2022**

Selected Coursework (ongoing*): Machine Learning, Stochastic Calculus, Big Data Technologies*, Operations Research Tools in Finance, Fixed Income and Interest Rate Options, Portfolio Management, Market Microstructure*, Monte Carlo Simulations*

SKILLS

Technical: Python, R, SQL, Excel, C++
Certifications: **CFA Level III Candidate**, Bloomberg Market Concepts, Akuna Options 201
Other Tools: Trading Technologies (TT), Stellar, Bloomberg Terminal, Refinitiv Eikon, Bash (SSH/Linux)

EXPERIENCE

Senior Market Analyst [Rates Trader], *Axxela Research and Analytics,* Bengaluru, India   **July 2022 to Mar. 2024**
- Traded US, Australian, and Canadian fixed income derivatives, specializing in Short Term Interest Rate futures (SOFR, IR, BAX etc.); managed a max trade size of 700 lots, amounting to a margin account of over $3million.
- Collaborated with senior traders to optimize trade execution, perform data analysis, hedge portfolio risk, and generate PnL for the fixed income trading desk, achieving the highest PnL among a cohort of 40 in my training period.
- Executed diverse trading strategies, including yield curve predictions, inter-market, and arbitrage, focused on key market catalysts like FOMC meetings, economic data releases (NFP, CPI), Fed comments, and macroeconomic data.
- Leveraged quantitative models and data analysis to identify profitable trades in futures spreads and butterflies.

Research Assistant, *SC Johnson School of Business,* Cornell University, NY   **Dec. 2024 to Present**
- Collaborating with Professor Mao Ye on market microstructure research; currently contributing to a working paper on "Repurchase Smoothing", leveraging LLMs and RAG to extract and analyze data from SEC 10-K and 10-Q filings.
- Wrote and deployed efficient code on cloud-based server infrastructure for processing over 500GB of data with LLMs.

PROJECTS

Automated Trading and Strategy Backtesting using Interactive Brokers API (🔗)
- Developing an algorithmic trading system using Interactive Brokers API to fetch and analyze real-time and 5 years of historical data, implementing and backtesting strategies with sentiment models, relative value and technical indicators, including options strategies like Iron Condor and Straddle with Python libraries (ib_insync, backtesting.py).
- Automated order execution in a live market environment using a paper trading account, leveraging advanced Python techniques. Actively refining strategies/backtesting rules to identify and execute profitable trading opportunities.

Sentiment Analysis on Financial News using AI and LLMs (🔗)
- Developed and implemented a sentiment analysis pipeline using a custom LSTM model with Keras and TensorFlow, a pre-trained FinBERT model, along with different LLMs (via APIs) to classify financial news articles.
- Achieved 75% accuracy with my custom model, 71.5% with FinBERT, 71% with Llama 3.3, 66% with Deepseek R1.

Financial Forecasting Using Machine Learning (🔗)
- Performed data preprocessing, including feature engineering and dimensionality reduction. Gained understanding of concepts like PCA and feature correlations and how these factors influence model performance and decision-making.
- Designed and optimized forecasting models to predict Revenue changes, utilizing multiple supervised ML models. Decreased errors by 50% across the board by dividing features into fundamental baskets and applying PCA to each.

LEADERSHIP EXPERIENCE

Vice Captain (Tennis) and Creative Head, *Sports Council, IIT Dhanbad*   **Aug. 2019 to May 2022**
- Led the university lawn tennis team of eight as the Vice Captain at various inter college tournaments.
- Designed the official team jersey and banners; organized PARAKRAM, one of the largest sports fests in Eastern India.

INTERESTS

Filmmaking, Lawn Tennis, Singing, Guitar, Poker