Dev Kewlani

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Education & Credentials

North Carolina State University — **United States**
Master of Financial Mathematics — *December 2025*
GPA 4.0/4.0

Thapar Institute of Engineering and Technology — **India**
Bachelors of Engineering in Computer Engineering — *June 2022*

Chartered Financial Analyst (CFA) - Passed Level 1 — *February 2024*
JPMorgan Chase & Co. Quantitative Research Program on Forage — *February 2025*
Akuna Options 101 and 201 — *November 2024*

Coursework

Stochastic Calculus, Probability Theory and Hypothesis Testing, Fixed Income Instruments, Monte Carlo Methods, Statistical Learning, Quantitative Strategies, Applied Time Series Analysis, Bayesian Computations, Option Pricing, Portfolio Optimization, Equity Valuation

Skills & Certifications

Technical Skills: Python, SQL, Excel, Unix, Bloomberg, Microsoft Office Suite, Blackrock Aladdin
Libraries: numpy, pandas, scipy, tensor flow, Pytorch, HyperOpt, scikit-learn, cvxpy, statsmodels

Work Experience

JPMorgan Chase & Co. — **United States**
Quantitative Researcher Intern — *June 2025 - August 2025 (Incoming)*

NX Block Trades — **India**
Quantitative Trader — *November 2023 - June 2024*

- **Designed** a comprehensive **Algorithmic Trading framework** for Indian and US markets, incorporating various predictive features from futures and options data and using **time series and machine learning ensemble models** to trade 0-2 DTE options
- **Developed a robust backtesting** framework, to test strategies involving vol ratios of OTM and ITM options
- This strategy achieved a **Sharpe Ratio of 2.4**, with a cumulative profit of 45% and a maximum drawdown of -8% in **backtesting**
- Implemented **signal processing and order routing** using interactive and market data web sockets, streamlining execution in markets

Blackrock — **India**
Quantitative Analyst — *September 2022 - November 2023*

- **Applied** quantitative analytics techniques to estimate and stress-test potential impacts on client portfolios from various factors, including VIX fluctuations, geopolitical events, and changes in the debt ceiling, resulting in enhanced risk management strategies
- **Developed** and refined an analytics script to pinpoint missing stress and tail scenarios in client portfolios that helped achieve a **40% reduction in production processing time**, optimizing team resources effectively
- **Implemented** comprehensive factor-wise risk reporting for wealth management professionals overseeing a combined AUM of $900B
- **Led a strategic alliance** with wealth management professionals, leveraging Aladdin to implement factor-wise risk reporting

Futures First — **India**
Intern - Commodities (Wheat) Trader — *January 2022 - July 2022*

- Conducted **market research and time series** analysis on agricultural and energy commodities to forecast seasonality trends
- **Trained autoregressive models** on historical data to capture the time-varying volatility dynamics of crude oil prices
- **Employed XGBoost** to augment econometric models enhancing forecasting accuracy for crude oil volatility from 60% to 65%

Projects

AlphaPortfolio - Direct Portfolio Optimization Using Deep Reinforcement Learning

- **Developed** a deep reinforcement learning framework that integrates a transformer-based Sequence Representation Extraction Module with a Cross-Asset Attention Network to capture both temporal dynamics and cross-asset interdependencies from data between 2000-2020
- **Engineered** a sliding-window data pipeline that simulates multi-step (monthly) rebalancing to directly optimize the **Sharpe ratio (~1.7)**
- **Implemented** an RL training loop with delayed reward mechanisms that backpropagates through sequential decision-making steps, allowing the system to learn optimal asset allocation policies without relying on traditional forecasting **generating 13% on OOS data (2021-2024)**
- **Gained hands-on experience in reinforcement learning, time-series data processing, financial econometrics and portfolio optimization**

Asset Allocation Backtesting Framework

- **Engineered** a robust system to evaluate strategies—including delta hedging, gamma hedging, and long/short volatility
- **Dynamically** tracked position Greeks to adjust multi-leg positions, reducing backtest runtimes to 4 minutes per year of tick data

Loss Given Default Model for Mortgage Loans

- **Developed** a risk model for a residential mortgage portfolio, using **Fannie Mae Single Family Home** Loan Dataset
- **Benchmarked Linear Models with XGBoost** and achieved accuracy levels in line **(~65%)** with the current academic research in the field
- **Identified** LTV, Occupancy Status, CPI, Home Price Index, Mortgage Insurance Type and Last Paid Installment as **key features**