

EDUCATION

National Institute of Technology, Warangal

B.Tech Computer Science and engineering

December 2021 – April 2025

- **Relevant Courses:** Economics and financial analysis, Probability, Statistics and Queueing theory, R programming, Database Management System, Discrete mathematics, Data structures.

Fox School of Business(Temple University), Philadelphia

M.S. Quantitative Finance

August 2025 – May 2027

- **Relevant Courses:** Derivative markets, Asset pricing, Continuous finance, Stochastic calculus, Numerical methods, Credit risk modeling, Volatility modeling.

WORK EXPERIENCE

Principio Holding

Junior Consultant

March 2025 – June 2025

- Conducted **end-to-end financial, market, and operational analysis** of European subsidiaries, integrating **financial modeling, industry benchmarking, and scenario analysis** to evaluate growth potential and investment feasibility
- Designed and implemented **data-driven strategic frameworks** leveraging **KPIs, unit economics, and cost-optimization models** to improve subsidiary-level **profitability, scalability, and operational efficiency**
- Collaborated closely with senior leadership to develop **investment theses, valuation models, and portfolio performance metrics**, supporting **capital allocation and portfolio optimization decisions**

Varidus

Startup advisor

December 2024 – April 2025

- Led a **cross-functional 5-member finance team**, structuring **financial narratives, pitch decks, and valuation frameworks**, resulting in a **25% improvement in investor conversion rates**
- Designed and operationalized the **SERA Fund Model**, integrating **capital allocation logic, risk-return trade-offs, and execution workflows**, improving **deployment efficiency by 30%**
- Enhanced **fundraising strategy and investor targeting** through **quantitative analysis of pipeline dynamics**, significantly improving **visibility and strategic positioning**

Hinduja Global Solutions

Data science Intern

June 2024 – July 2024

- Developed and optimized **Bayesian Personalized Ranking (BPR) recommendation models** using **RecBole**, improving **ranking accuracy and personalization performance by 20%**
- Engineered and processed **large-scale user-item interaction datasets**, implementing **feature transformations and efficient data pipelines** to reduce **model training downtime by 30%**
- Evaluated model performance using **AUC, NDCG, and F1-score metrics**, conducting **comparative benchmarking and hyperparameter tuning** to enhance predictive quality

Hinduja Global Solutions

Engineering Intern

June 2023 – July 2023

- Built and maintained **scalable ETL pipelines** for high-volume datasets, ensuring robust **data ingestion, cleaning, transformation, and validation workflows**
- Improved **data architecture and pipeline reliability** by identifying bottlenecks and implementing **efficient data processing strategies**
- Collaborated with **data science and analytics teams** to align **data engineering pipelines with downstream modeling requirements**, improving overall **system efficiency and model readiness**

PROJECTS

Volatility Forecasting — SPY Multi-Model Engine

- Built a **robust out-of-sample volatility forecasting framework** for SPY, integrating **GARCH-family models, gradient boosting (XGBoost, LightGBM), and stacked ensemble techniques** to capture both linear and nonlinear dynamics
- Engineered advanced quantitative features including **fractional differentiation, Garman-Klass and Parkinson volatility estimators, overnight gap signals, VIX term structure, and credit stress indicators** to enhance signal strength
- Achieved **15–20% improvement in predictive accuracy** over baseline models, validated using **QLIKE loss, RMSE, and Diebold-Mariano statistical tests for model comparison**

Alpha Engine

- Developed a **multi-regime systematic portfolio construction framework**, combining **machine learning-based return forecasts with Bayesian Black-Litterman optimization** across a diversified universe of **15 multi-asset ETFs**
- Engineered **cross-sectional factor signals** including **momentum, RSI, MACD, Bollinger Bands, realized volatility, and higher-moment statistics**, generating robust **alpha signals under varying market conditions**
- Integrated **GJR-GARCH volatility forecasts, regime-switching logic, and CVaR/mean-variance optimization**, dynamically adjusting portfolio allocations across **low- and high-volatility regimes**
- Conducted rigorous performance validation using **Deflated Sharpe Ratio, block bootstrap simulations, and information coefficient analysis**, incorporating **transaction costs and realistic rebalancing constraints**

Portfolio Value at Risk

- Built and evaluated **13 advanced VaR models**, including **GARCH variants, Extreme Value Theory (EVT), and Filtered Historical Simulation (FHS)**, applied to a **20-year multi-asset ETF portfolio**
- Performed comprehensive **backtesting using Christoffersen tests (POF, independence, conditional coverage) and Expected Shortfall validation**, ensuring statistical robustness
- Quantified a **~89% increase in portfolio VaR during crisis periods**, demonstrating that **correlation spikes, rather than volatility alone, drive tail risk via Component VaR decomposition**

SKILLS

Programming & Modeling: Python, R, SQL, C++, Matlab, Excel, Asset Pricing, Derivatives, Portfolio Optimization, Risk Modeling, Volatility Modeling, Time Series Analysis, Factor Modeling, Financial Econometrics, Quantitative Analysis, Quantitative Finance, Data Analysis, Power BI, Financial Systems, Microsoft Office, Data Visualization, Data Modeling, Data Science, Analytical Skills, Credit Analysis, Database Management