

# RITHIK REDDY MATTA

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## EDUCATION

### RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

Rutgers Business School- Newark, NJ

Master of Quantitative Finance

August 2025 – January 2027

### MAHINDRA UNIVERSITY

École Centrale School of Engineering – Hyderabad, IN

Bachelor of Technology in Electronics and Computer Engineering

October 2020 – August 2024

**Relevant Coursework:** Linear Algebra, Statistics and Probability, Differential Equations & Calculus, Numerical Methods, Machine Learning, Optimization Techniques, Theory of Computation, Design and Analysis of Algorithms

## SKILLS

**Programming:** Python, C++, MATLAB, SQL, Machine Learning (NumPy, Pandas, scikit-learn, TensorFlow, OpenCV, Matplotlib), Deep Learning (ANN, RNN, CNN), DSA (Data Structures and Algorithms), Operating Systems, Web Scraping, API's(yfinance), Git, Linux.

**Other:** Intraday Trading(F&O), Swing Trading, Hedging (Equity and Commodities).

## EXPERIENCE

### SAVEN TECHNOLOGIES

Jun 2024 – Dec 2024

#### Machine Learning Intern

- Partnered with cross functional teams to program ML models forecasting daily customer inflow (~10K+ entries/day), improving peak-hour prediction accuracy by 15%.
- Streamlined dataset engineering and automated dashboard creation for the footfall data, reducing data noise by 20% and improving marketing campaign targeting efficiency by 20%.

## PROJECTS

#### Risk assessment of Federal T-Bonds with Quantum Computing and Monte Carlo simulation

- Calculated VaR and CVaR for 20- & 30-year U.S. Treasury Bonds using historical datasets (1962–2024).
- Engineered QAE in Qiskit and Monte Carlo (10,000+ iterations), comparing across confidence intervals.
- Validated QAE's ~88% faster runtime (0.02s vs 0.17s), illustrating exponential efficiency.

#### Building an Economic model for calculating Premiums of Cybersecurity Insurances

- Collaborated with a 3-member team to build an economic model enabling insurers to price cybersecurity policies using company-specific risk profiles.
- Applied CVSS security metrics (confidentiality, integrity) to assess vulnerabilities and risk exposure.
- Risk exposure quantified to determine optimal premium pricing for policy issuance.

#### Option Pricing Using Quantum Amplitude Estimation

- Developed Option pricing model using real-time stock data from Yahoo Finance.
- Quantum Amplitude Estimation (QAE) and Monte Carlo simulations used for payoff computation.
- Comparative analysis confirmed QAE's exponential advantage in pricing efficiency.

#### Foreign Exchange Rate Prediction using Machine Learning

- Predicted exchange rates for AUD, JPY and CAD to INR using regression and random forests.
- Benchmarked accuracy with MAE, demonstrating random forests achieved 96% accurate forecasts.
- Analysed model limitations, identifying regression struggles with skewed data distributions.

## ADDITIONAL

- Numismatics: Collecting coins and currencies from 30+ countries over 13 years.
- Reading Books on various topics, including history, finance, behavioural psychology and Technology.