VINEEL PENTRALA

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Education

Stevens Institute of Technology — **Hoboken, NJ**
Master of Science in Financial Engineering — Expected Dec 2025
Courses: Pricing & Hedging, Market Microstructure & Trading Strategies, Stochastic Calculus, Computational Methods in Finance, Bloomberg Terminal, Portfolio Theory & Applications, Optimization Models

Mahindra University — **Hyderabad, India**
Bachelor of Technology in Computer Science and Engineering — 2020–2024
Courses: High Performance Computing, Data Structures, Design & Analysis of Algorithms, Machine Learning, Optimization for AI, Database Management Systems, Computability and Complexity Theory

Skills

Technical: C++, Python, R, Bloomberg Terminal, Oracle SQL, Bash
Languages Spoken: English, Telugu, Hindi, French (Conversational)

Experience

Summer Research Fellow – School of Business — **Stevens Institute of Technology**
Automated Market Makers in Decentralized Finance — May 2025-Aug 2025
- Awarded a funded Research Fellowship to study Automated Market Makers (AMMs) in DeFi.
- Worked on the Stevens High-Frequency Trading Simulation System, fixing bugs and correcting the current FIX (QuickFIX) implementation to enable future system upgrades. Started official documentation for the project.
- Explored tokenization frameworks to assess feasibility of representing illiquid traditional financial assets as blockchain-based tokens.

Cantor Fitzgerald — **Hyderabad, India**
Backend Development Intern — Jan 2024–Jul 2024
- Developed packages, functions, designed tables, and automated backend tasks using bash scripts adhering to project specifications.
- Migrated 25+ PL/SQL reports to XML Publisher, streamlining reporting processes and reducing manual intervention. Upgraded and tested 110+ existing reports to enhance usability.
- Optimized scripts and performed backups to handle growing data, improving system reliability.

Projects and Activities

Empirical Analysis of TSLA Microstructure Data — **Stevens Institute of Technology**
- Analyzed nanosecond tick-level TSLA data to study liquidity, volatility, and probability of informed trading (PIN) with quantified intraday patterns (pre-market, auction, after-hours) via quoted, effective, and realized spreads.
- Conducted event-driven analysis of large trades and price jumps, measuring their impact on spreads, depth, and order imbalance.

SMCI Option Pricing — **Stevens Institute of Technology**
- Priced American options on SMCI stock using binomial tree and Black-Scholes models, computed Greeks via finite differences to analyze sensitivities.
- Designed and tested hedging strategies (delta, vega) under real-world volatility and interest rates.

Founder - Hurricane Programming Club — **Mahindra University**
- Started a competitive coding community that led to a partnership with CodeChef & USACO. Organized workshops/contests for 100s of students. Managed a group of 6 students to conduct activities.

Certifications and Awards

- Top 20% in CME Trading Challenge 2024; 1st among Stevens' graduate students.
- Standardised test scores: GRE Quant 170/170; JEE-Main 95th percentile.
- Consistently Ranked Top 5 in Mahindra Univeristy Competitive Programming Challenges.
- Bloomberg Market Concepts (BMC) Certified (Dec 2024).
- Top 10% in AWS DeepRacer July 2023 Student Qualifier, India.
- Flipkart GRiD 4.0 : Level 2 Qualifier (2022)