

Harsha Matta

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Education

University of North Carolina at Chapel Hill

Chapel Hill, NC

B.S. Applied Mathematics & Computer Science

Aug 2025 – Present

- **Mathematics:** Linear Algebra (Math 347, In Progress), Multivariable Calculus (Math 233), Discrete Mathematics (Math 381).
- **Computer Science:** Data Structures (COMP 210), Foundations of Programming (COMP 301, In Progress), Systems Fundamentals (COMP 211, In Progress).

Research Interests

Quantitative Finance, Computational Mathematics, Options Pricing Models, Stochastic Calculus, Machine Learning in Finance

Quantitative Projects

Black–Scholes Option Profit Model | *Python, Streamlit, Pandas, Independent Project*

Feb 2025 – Mar 2025

- Developed a web-based computational tool implementing the Black–Scholes framework to calculate historical call option costs and simulate cumulative payoff structures.
- Integrated dynamic visualizations to analyze volatility sensitivity and risk-neutral valuation scenarios.

Options Greeks Visualizer | *Python, Data Visualization, Independent Project*

Nov 2025

- Engineered an interactive dashboard modeling Delta, Gamma, Theta, Vega, and Rho in real time across varying strike prices and maturities.
- Translated derivative pricing inputs into interpretable visual analytics for scenario-based risk assessment.

Technical Writing | *Medium & LinkedIn — Quantitative Finance*

- Authored technical articles explaining derivative pricing theory, generating 3,400+ total impressions; covered Black–Scholes modeling and binomial hedging approaches for American options.

Professional Experience

deal.II (Open Source)

Remote

Open Source Contributor

Feb 2026 – Present

- Contribute performance optimizations and infrastructure improvements to a large-scale C++ scientific computing library used in high-performance numerical simulations.

Technospire

Charlotte, NC

Founder & President

Mar 2024 – Jul 2025

- Founded and led a computer science nonprofit; organized three hackathons with 130+ participants.
- Designed and delivered structured Python curricula to 30+ middle school students.
- Managed a 12-member team to deploy websites for four small businesses and expand a technical newsletter to 190+ subscribers.

CyberWIN

Monroe, NC

Intern & Marketer

Apr 2024 – May 2025

- Led development of an AI-powered document analysis feature supporting cybersecurity compliance (CMMC/NIST).
- Contributed to the SDLC of the CySAT platform, gaining experience in deployment workflows and product iteration.

Unilever

London, UK

Student Intern (Web Development)

Jul 2022

- Developed a website personalization prototype during a corporate hackathon; gained exposure to agile workflows and accessibility standards.

Skills & Certifications

- **Programming:** Python (Pandas, NumPy, Streamlit), C++, Java, Dart (Flutter), JavaScript, $\text{\LaTeX}$
- **Tools:** Git, Figma, Agile Methodology, SDLC
- **Certifications:** Financial Markets (Yale/Coursera), Intro to Model Context Protocol (Anthropic)
- **Languages:** English (Native), Telugu (Native/Bilingual)

Honors & Awards

- UKMT Mathematics Challenge: 2× Gold (Intermediate), Silver (Senior)
- Duke of Edinburgh Award: Bronze & Silver
- *Paatam* Mobile App: 275+ downloads on iOS/Android