# Rohan C. Shah

74 Bridle Path, Belle Mead, NJ 08502
rcs353@cornell.edu | 908-255-3658 | linkedin.com/in/rohan-c-shah

## Education

**Cornell University, College of Engineering** **Expected May 2025**
*Bachelor of Science in Computer Science, Minor in Economics, GPA: 3.6* *Ithaca, NY*
Relevant Coursework: Analysis of Algorithms, Computer Systems*, Computer Vision, Database Systems, Discrete Structures, Functional Programming, Machine Learning*, OOP and Data Structures **denotes in progress*

## Work Experience

**Trillium Trading** **June 2023 – July 2023**
*Software Engineering Intern* *New York, NY*
- Developed a proxy service capable of calculating implied volatilities and options Greeks for $\sim$ 6,000 listed options
- Integrated real-time OPRA and UTP market data feeds into proxy connected through a Linux server, enabling seamless and accurate service calculations running in $<$ 1msec to be used in proprietary trading software
- Enhanced market data access efficiency by spearheading the design of robust C++ concurrency protocols

**Fidelity Investments** **June 2022 – August 2022**
*Full-Stack Engineering Intern* *Boston, MA*
- Designed and built an internal AutoSys job management application (containing 90,000 jobs) using Angular and Django
- Implemented back-end view functions to query Oracle database containing jobs, along with REST APIs to send queried job information to front-end for user control and management
- Collaborated on running Jenkins CI/CD pipelines to automate migration of the application from on-premise to AWS S3, and hosting production-level Django EC2 Linux server with Nginx and Gunicorn
- Excelled in an Agile-at-Scale environment working with enterprise software to support Asset Management department, and presented project to Asset Management Technology executives

**Cornell Data Science** **October 2021 – Present**
*Quantitative Finance Subteam Member* *Ithaca, NY*
- Seasoned developer on fintech-focused projects related to trading applications, strategies, and cloud architecture, primarily leveraging AWS, Python, and API development for optimal trading scenarios
- Currently developing a front-facing exchange application to generate betting lines on NCAA sports matches using React, Python, and machine learning backtesting

## Projects

**Hedged Sports Betting** **February 2023 – May 2023**
*Project Lead* *Ithaca, NY*
- Utilized BeautifulSoup to scrape sports betting data from American sportsbooks while overseeing Python request management over multiple web domains
- Extracted JSON data from open-source sports betting data aggregator APIs, and effectively parsed through large responses and developing organized class structures to hold individual sports events/their metadata
- Applied advanced arbitrage calculations to both data sources to identify risk-free profitable opportunities, leading to higher profits in 46.3% of arbitrage scenarios compared to traditional betting (on the favorite)

**Cloud-Based Options Trading Bot** **September 2022 – December 2022**
*Cloud Team Member* *Ithaca, NY*
- Built a serverless cloud computing options trading bot supporting a long-straddle strategy on AWS
- Utilized AWS CDK and Docker containers to develop and implement configuration stack for all AWS components (DynamoDB, EventBridge, Lambda) and manage Python dependency installations used to support strategy
- Validated bot architecture web scraping of article headlines from Bloomberg, sentiment analysis of headlines with DistilBERT, and writing of profit returns to DynamoDB with AWS Step Functions

**Generating Alpha via Diversified Algorithms** **February 2022 – May 2022**
*Project Member and Publication Author* *Ithaca, NY*
- Analyzed optimal times to employ momentum/mean reverting trading strategies using the Hurst exponent, by classifying time series data as trending or mean reverting and trading in their respective advantageous times
- Assisted in proposing an optimization strategy using reinforcement learning (Q-learning) and Markov decision processes
- Research paper, *Optimizing Returns Using the Hurst Exponent and Q Learning on Momentum and Mean Reversion Strategies*: https://arxiv.org/abs/2205.11122

## Skills and Honors

**Programming Languages**: Java, Python, C++, JavaScript/TypeScript, HTML/CSS, SQL
**Tools and Frameworks**: Angular, AWS, Django, Docker, Git, Jira, LaTeX, Linux
**Honors**: SIG Sophomore Discovery Day, Columbia University SHP, National Merit Finalist, National AP Scholar