# Anshuman Singh

Boston, MA | 857-891-3441 | anshumansingh0819@gmail.com | [LinkedIn](#) | [Github](#)

## EDUCATION

**Northeastern University** | Boston, MA  **GPA:** 3.91/4.00
*Bachelor of Science in Mathematics*
**Relevant Coursework:** Financial derivatives, statistics and stochastic processes, linear algebra, differential equations.
**Honors:** Summa cum laude, Dean's list

## PROFESSIONAL EXPERIENCE

**QuantSquad**  August 2023 – Present
*Software Engineer*
- Architected and developed a comprehensive full-stack platform for quantitative finance education platform using Next.js, TypeScript, and PostgreSQL.
- Implemented extensive frontend components with React and various UI libraries while coding backend logic and integrations for authentication (Clerk), payments (Stripe), and email services (Resend).
- Orchestrated the entire tech stack in a monorepo architecture, managing frontend, backend, and DevOps (GitHub Actions, Vercel) aspects of the project.
- Led end-to-end development from UI/UX design to production, including conducting alpha tests with 35 financial engineering students that measurably improved their interview preparedness.

**Lighthouse Canton** | Mumbai, India & Singapore, Singapore  May 2022 – August 2022
*Quantitative developer, Investments team*
- Designed a high-throughput data pipeline in C++, leveraging multi-threading, memory-mapped file I/O, and lock-free queues for efficient ingestion and processing of large scale portfolio data into a vectorized database.
- Developed client and server-side socket adapters using async I/O, epoll, and zero-copy techniques to minimize data transfer latency. This optimization reduced fetch times and bolstered real-time financial analytics capabilities by fine-tuning TCP/IP stack interactions and minimizing context-switch overhead.

**Northeastern University** | Boston, MA  July 2021 - August 2021
*MATH 3527 Number Theory Teaching Assistant*
- Conducted group and individual problem-solving sessions which led to 25% increase in midterm grades and overall content comfort.
- Graded and provided feedback on class problem sets.

## PROJECTS

- **BitTorrent Clone:** Implemented a BitTorrent client in C++ from scratch, featuring a custom Bencoding parser and peer discovery via REST API GET requests. Established TCP connections with peers and utilized multithreading for concurrent downloads and packet verification.
- **HTTP Webserver:** Developed a multithreaded HTTP server in Python supporting GET/POST methods and persistent connections. Implemented socket programming for TCP connections and request handling, with each thread managing individual requests for concurrent processing. Adhered to HTTP/1.1 specifications for request parsing and response generation.
- **Algorithmic trading model:** Selected by Optiver to compete in their ready trader go competition. Developed an automated pair trading strategy using the Avellaneda-Stoikov market making model. Passed two rounds with algorithm profits of $12,000 in a simulated exchange operating in the derivatives market.

## SKILLS & INTERESTS

**Programming:** Python, Go, C++, TypeScript, Lua, PostgreSQL, MongoDB, AWS, Vercel, Docker, Kubernetes, Unix/Linux
**Certifications & Training**: Data structures & Algorithms - AlgoExpert, National Institute of securities markets series V-A
**Interests:** Competitive programming, weightlifting, guitar, learning languages, cooking.