

ALTON BANUSHI

(608) 921-5467 | altonbanushi@icloud.com | [linkedin.com/in/alton-banushi](https://www.linkedin.com/in/alton-banushi) | github.com/banushi-a | altonbanushi.com

WORK EXPERIENCE

Quantitative Risk Developer Co-op

New York, NY

Nomura

August 2024 – December 2024

- Enhanced internal revenue prediction by optimizing ARMAX statistical model parameters, incorporating time-series anomaly detection, and introducing 3 new business lines, ultimately reducing R^2 error by 30%.
- Collaborated with stress-testing analysts to define and automate a back-testing methodology using Python and SQL, reducing manual data manipulation by 3x and improving model accuracy.
- Researched and deployed machine learning processes to predict domestic and foreign stock indices, driving internal risk predictive models to achieve R^2 error of ≥ 0.85

Software Engineering Intern

New York, NY

TD Securities

June 2024 – August 2024

- Designed and implemented an optimized RESTful API using Spring Boot, leveraging query optimization and caching to improve response efficiency by 40%.
- Engineered a dynamic React interface, utilizing Redux for state management to centralize and automate internal deal management, eliminating manual processes and reducing waiting periods by 4x.
- Automated API testing using JUnit and Mockito, integrating with Jenkins CI pipelines to increase code coverage to 90% and reduce manual testing efforts by 2x.

Quantitative Developer Co-op

Chicago, IL

UBS

December 2022 – August 2023

- Engineered a custom fixed-income web tool in collaboration with portfolio managers, leveraging React, TypeScript, and D3.js to visualize 300+ months of market data, enhancing analytical capabilities.
- Launched a portfolio optimization tool utilizing Mixed Integer Programming and internal model research, increasing data points analyzed by 75% and enabling more precise, data-driven investment decisions.
- Developed and maintained a scalable back-end system using Python and SQL to automate the collection and processing of fixed-income market data, reducing manual analysis time by 2x and enhancing portfolio management efficiency.

Teaching Assistant

Boston, MA

Khoury College of Computer Sciences

August 2022 – May 2024

- Instructed 40+ students in a weekly lab, explored lecture topics on algorithms and data structures more intensively, addressed student questions one-on-one
- Provided personalized feedback to students on over 30 assignments weekly, analyzing and evaluating more than 15,000 lines of code to identify areas for improvement
- Conducted weekly office hours, guiding 8+ students an hour on homework, debugging 10,000+ lines of code

PROJECTS

Cooper - Co-op Review Platform

- Led a team of seven developers and two designers to create a platform enabling 10,000+ Northeastern students to share details of their co-op experiences, utilizing Next.js, TypeScript, Tailwind, Drizzle, tRPC, and Google OAuth
- Scraped online sources for data of 2,000+ companies, ensuring our database maintains high quality data
- Implemented a custom location forward-search endpoint, allowing users to enter 140,000+ standardized cities

EDUCATION

Northeastern University

Boston, MA

B.Sc. in Computer Science and Mathematics

Sep 2021 – May 2025

GPA: 3.99/4.0

TECHNICAL SKILLS

Languages: Java, TypeScript / JavaScript, Python, C++, C#, Swift, MATLAB, R

Technologies: React, Next.js, MySQL, Spring Boot, Express, Prisma, Tailwind, Docker, Datadog, SwiftUI