

ALTON BANUSHI

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EDUCATION

Northeastern University

Boston, MA

Candidate for B.Sc. in Computer Science and Mathematics

Sep 2021 – May 2025

Coursework: Object Oriented Design, Algorithms & Data, Foundations of Data Science, Computer Graphics, Database Design, Linear Algebra, Probability & Statistics, Calculus 3, Statistic & Stochastic Processes, Group Theory

GPA: 3.99/4.0

WORK EXPERIENCE

Risk Developer Co-op

New York, NY

Nomura

August 2024 – December 2024

- Innovated internal revenue predictive capability by refining ARMAX statistical model implementation, introducing 3 new business lines and reducing R^2 error by 30%
- Corresponded with stress-testing analysts to define and automate a back-testing methodology, reducing manual data manipulation by 3x
- 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 improved RESTful API using Spring Boot, resulting in a 40% increase in response efficiency
- Composed a React interface to centralize and automate internal deal management operations, eliminating manual operations and decreasing waiting periods by 4x
- Automated testing of APIs using JUnit and Mockito, increasing code coverage to 90% and reducing manual testing efforts by 2x

Quantitative Developer Co-op

Chicago, IL

UBS

January 2023 – July 2023

- Collaborated with portfolio managers to engineer a custom fixed-income web tool, enabling visualization of 300+ months of data using React and TypeScript
- Launched a comprehensive portfolio optimization tool employing advanced mathematical models, which increased the number of data points analyzed by 75%, ultimately leading to more informed investment decisions and enhanced financial outcomes
- Developed and maintained a back-end system to collect and process large-scale fixed-income market data using Python and SQL, reducing manual portfolio analysis by 200%

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

Reflective Curve Visualizer | C++, OpenGL, GLM

- Developed a graphics application that allows users to input mathematical functions and visualize their reflective properties in an environment
- Users can manage up to 10 functions at once, view their wireframe meshes, display the normal vectors, and invert the direction that the reflections are coming from.

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