

# Nathaniel Kilonzo

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## EDUCATION

### Northeastern University, Boston, MA

Sept 2023 – Present

Bachelor of Science in Computer Science, Minor in Mathematics

Expected Graduation: May 2027

GPA: 3.79/4.0 | Dean's List

**Relevant Coursework:** Distributed Systems, Network Fundamentals, Computer Systems, Fundamentals of Software Engineering, Object-Oriented Design, Algorithms and Data, Foundations of Cybersecurity

**Activities:** ColorStack, NSBE, Wireless Club

## TECHNICAL SKILLS

**Languages:** Java, Python, Go, C#, C, TypeScript / JavaScript, C++, SQL, GraphQL

**Tools/Frameworks:** Node, Django, Flask, Docker, Git, React, Express, Spring Boot, Jinja, PyTorch

## EXPERIENCE

### Microsoft

May 2025 – July 2025

Software Engineer Intern

Redmond, WA

- **Designed and implemented three AI-driven pipelines** that automatically produced thumbnail and title variations, showcasing scalable engagement-optimization strategies for SharePoint/OneDrive
- Built and optimized a **PyTorch Deep Neural Network (DNN)** for predicting video playback likelihood, achieving a **higher F1 score** than the existing baseline model in experimental evaluations.
- Engineered a **feature analysis module** in media processing service to calculate and capture upload-time properties for future **DNN enhancement**

### Microsoft

May 2024 – Aug 2024

Explore Intern (SWE + PM)

Redmond, WA

- Implemented a **GraphQL API** for a bulk message deletion feature, improving user handling of draft messages
- Explored an **LLM-driven solution in Python** for file-based Q&A extraction, increasing extraction accuracy by over 50%
- Contributed to backend bug fixes and optimizations in **Java**, improving system stability and performance

### Northeastern University

Sept 2024 – April 2025

Teaching Assistant - Fund. of Computer Science

Boston, MA

- Co-led lab sessions with 35 students, improving their practical programming skills and conceptual understanding
- Graded approximately 40 problems per week, ensuring timely feedback
- Provided support through office hours

## PROJECTS

### Distributed Cache | Go, Docker, NGINX

Aug 2025 - Sep 2025

- Implemented a multi-node in-memory cache in Go with LRU eviction, TTL expiration, and consistent hashing for efficient key distribution.
- Integrated an NGINX load balancer to route requests, ensuring scalability and single-entry access while supporting node forwarding.
- Exposed HTTP API endpoints, containerized nodes with Docker, and tested with Postman, demonstrating practical deployment and distributed systems skills.

### Audio to Text Converter | Spring Boot, Spring AI, React

Nov 2024 - Dec 2024

- Developed an application to convert audio files into accurate and readable text using ChatGPT API integrated via Spring AI.
- Built a robust back-end with Spring Boot to process audio input and manage text outputs.
- Implemented a user-friendly React-based front-end for uploading audio file and viewing transcriptions.
- Utilized Axios to send requests to REST APIs for efficient file upload operations, enabling smooth communication between front-end and back-end services.

**Interests:** Perfecting homemade soup stocks on weekends, exploring scenic hiking routes, discovering new jazz records