

Hussain Khalil

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Education

Northeastern University, Boston, MA
Bachelor of Science in Computer Science

September 2020 – December 2023

GPA: 3.98

Courses: Computer Systems, Computer Graphics, Software Development, Algorithms & Data, Object-Oriented Design

Awards: Summa cum laude, Dean's List (All Years), National Merit Scholarship

Activities: Competitive Programming Club, Cycling Club (Road Captain), Pakistan Student Association (Treasurer)

Technical Knowledge

Languages: Python, C, C++, Go, Assembly, TypeScript (JavaScript/ES6), Java, HTML, CSS, SQL, Verilog HDL

Libraries: PyTorch, OpenCV, pandas, dlib, numpy, Electron, React, Angular

Tools: Git, Bash, gcc, maketools, GitHub, Visual Studio Code, Node.js, npm, LaTeX, Docker, Excel

Systems: Linux/Unix, macOS, Windows, AWS, MySQL, MongoDB

Work Experience

Akamai Technologies, Cambridge, MA
Software Engineer

January 2024 – Present

- Building the Akamai Cloud Manager – a modern web app used to manage cloud compute, storage, managed DB instances

Akamai Technologies, Cambridge, MA
Software Engineering Co-op

January 2023 – July 2023

- Removed 5,000+ LOC by simplifying data-fetching layer of the Linode Cloud Manager using React Query
- Modernized the provisioning experience of new cloud VMs, Firewalls, Databases and Buckets for millions of production users
- Worked directly with customers, stakeholders and internal teams to support the launch of the new Cloud Metadata feature

Barrett Distribution Centers, Boston, MA
Software Engineering Co-op

January 2022 – September 2022

- Launched a modern portal to manage \$500 million of inventory for 16+ customers during post-pandemic shortages
- Delivered dozens of features and 20,000+ lines of code over 18 Agile sprints
- Corresponded directly with customers to receive feedback and resolve issues
- Developed in a modern tech stack using TypeScript, Angular and Java
- Deployed Docker containers to Amazon ECS to reduce compute costs and latency by an order of magnitude

Lead Teaching Assistant (Fundamentals I)

September 2021 – December 2021

Khoury College of Computer Sciences, Boston, MA

- Led 2 lab sections, crafting and presenting supplemental mini-lectures
- Conducted weekly office hours, providing one-on-one support to 900+ first-year CS students
- Strategized with professors and TAs weekly to discuss coursework and student performance

Projects & Open-Source Contributions

Deep RL Stock Portfolio Management (RL Final Project)

December 2024

- Evaluated the performance of deep RL methods from *StableBaselines3* to manage a stock portfolio.

VizNN (Graphics Final Project)

July 2023

- Created a 3D visualization of a LeNet convolutional neural network in OpenGL, showing real-time inference activations

Few Shot Facial Biometrics (ML Final Project)

December 2022

- Won best final project with a face-embedding convolutional neural network to enable rapid face recognition (<16ms)

Transparent Checkpointing

September 2022

- Wrote a C library to transparently suspend and resume any Unix program

Inventory CSP (AI Final Project)

December 2021

- Implemented Monte Carlo Tree Search to efficiently solve a real inventory constraint problem
- Achieved an exponential speed-up over brute-force solutions

Khoury Office Hours

September 2021 – December 2021

- Discovered and closed bugs causing issues for over 900 computer science students and TAs

Find A CVMS Teacher (FACT)

May 2017

- Developed a searchable directory for middle school students using data scraped from an official website
- Executed hundreds of searches a year from students and faculty