

HASSAN CHOWDHRY

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EDUCATION

Dalhousie University

Bachelor of Computer Science (BCS) (CGPA: 4.24/4.3)

Halifax, NS

Sep 2022 – Dec 2026

EXPERIENCE

Undergraduate Researcher

May 2025 – Present

Dalhousie University / NSERC | Python3, Pytorch, Ray, OpenAI Gym, LangGraph, LangChain, Hugging Face

Halifax, NS

- Engineered agentic AI-based Autonomous Cyber Defence (ACD) agents using Pytorch, achieving an increase in general threat detection accuracy within Cyber Operations Research Gym (CybORG) simulations
- Deployed a LangGraph-orchestrated LLM defence agent, cutting simulation false positives while providing transparent, natural-language rationales for every mitigation step.
- Developed vanilla PPO and curiosity-driven PPO and ICM blue-team agents, boosting CybORG general threat-detection accuracy and establishing a baseline for ongoing research.

Software Developer Intern

Jan 2025 – May 2025

Ansys | FastAPI, Python, React, Redux, JavaScript, C++, Azure, Docker, Cypress

Waterloo, ON

- Spearheaded the creation of a 50+ Cypress end-to-end test suite for Ansys Fluids WebUI, directly addressing 10+ critical UI bugs and accelerating the testing cycle by 15%.
- Enhanced Computational Fluid Dynamics (CFD) simulation tools by improving front-end and back-end systems, increasing user efficiency by 25% and reducing simulation setup time by 15%.
- Improved user experience and interface performance by optimizing graphics rendering and state management using Redux, resulting in a 30% reduction in UI latency and smoother interactions.

Software Developer Intern

May 2024 – Aug 2024

BOTR Solutions | Next.js, React, TypeScript, Python, Django, Docker, AWS, GCP, PostgreSQL

Vancouver, BC

- Reduced deployment time by 60% by automating CI/CD pipelines with AWS, ensuring scalable and reliable delivery.
- Accelerated feature development by 30% by designing and implementing comprehensive end-to-end backend systems for REST APIs using Django and PostgreSQL, reducing integration time and improving system reliability.
- Reduced data migration costs by 20% and improved processing efficiency by 35% by engineering an ETL pipeline to seamlessly migrate patient data, ensuring accuracy and scalability.

Head Teaching Assistant

Sep 2023 – Present

Dalhousie University | Server-Side Scripting, Data Structures & Algorithms, Web Development, Robotics

Halifax, NS

- Led and mentored 10 TAs, holding weekly coordination meetings and providing guidance on technical and instructional challenges to ensure smooth lab delivery for over 150 students.
- Boosted practical knowledge of 150+ students in frontend and backend development by leading weekly labs, ensuring hands-on learning and application of DS&A, Frontend, Backend and Fullstack development concepts.

PROJECTS

OldBailey AI | Next.js, Flask, OpenAI, Docker, MongoDB, TypeScript, Python, Redis, AWS

Jun 2024 – Aug 2024

- Accelerated historical research by utilizing AI-driven data analysis and prompt engineering, allowing researchers to gain insights into trends from the Old Bailey dataset in a fraction of the time compared to old methods.
- Enhanced user engagement in academic settings by engineering an AI-driven analytical tool for historians, enabling the examination of 2,500+ historical records and facilitating immersive role-playing scenarios.

TECHNICAL SKILLS

Languages: Python, JavaScript/TypeScript, Golang, C/C++, Java, PHP, SQL, HTML/CSS

Frameworks/Libraries: React, Next.js, Flask, FastAPI, Node.js, Express.js, Django, Redux, TensorFlow, Pytorch, LangChain

DevOps/Cloud: Docker, AWS, GCP, Azure, CI/CD Pipelines, GitHub Actions, Cypress, JUnit, Jest, Pytest

Developer Tools: Git, Postman, Jira, MySQL, PostgreSQL, MongoDB, Redis

LEADERSHIP, HONORS & CERTIFICATIONS

Honors & Awards: NSERC/FCS USRA, Third (3rd) in ICPC NENA 2024 Atlantic Region, Top 2% (Knight) on Leetcode

Certifications: AWS Solutions Architect, Cloud & AI, Stanford Machine Learning Specialization, Deep Learning Specialization

Leadership: President of the Dalhousie Muslim Student Association, Vice President of the Computer Science Leaders Society