

HASSAN CHOWDHRY

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Education

Dalhousie University

Sep 2022 – Dec 2026

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

Halifax, NS

Technical Skills

Languages: Python, JavaScript, TypeScript, Java, Go, C, C++, C#, PHP, SQL, GraphQL, HTML5, CSS

Libraries/Frameworks: React, Next.js, Spring Boot, Flask, FastAPI, Node.js, Express.js, Django, PyTorch, TensorFlow

DevOps/Cloud: Kubernetes, Docker, AWS, GCP, Azure, GitHub Actions, Firebase, Cypress, JUnit, Jest, PyTest

Developer Tools: Git, Android Studio, Linux, MySQL, PostgreSQL, MongoDB, Redis, Hugging Face, Postman, Jira

Work Experience

Undergraduate Researcher

May 2025 – Present

Dalhousie University

Halifax, NS

- Engineered **Agentic AI** cyber defense agents using **PyTorch** and **LangChain**, improving intrusion detection and prevention accuracy in simulated cybersecurity environments.
- Pioneered transparent cyber defense by creating a **LangGraph** LLM agents that justified mitigation steps in natural language, supporting the development of hybrid LLM and RL defense systems.
- Researched & developed **Deep Reinforcement Learning** and **LLM agents** to automate cyber defense in enterprise-scale network simulations, contributing to **scalable** intrusion prevention research.

Software Engineer Intern

Jan 2025 – May 2025

Ansys

Waterloo, ON

- Spearheaded a **50+ Cypress** E2E test suite for Ansys Fluids with CI on **Kubernetes**, surfacing **10+** critical UI defects and cutting regression time **15%**.
- Enhanced enterprise-scale simulation workflows by standardizing a **React** and **JavaScript** frontend with **FastAPI** **microservices** and **Docker** environment, boosting user efficiency **25%** and reducing setup time **15%**.
- Improved UI latency **30%** by optimizing graphics rendering and **Redux** state architecture, delivering smoother interactions for **1,700+ companies** as part of a **50k+** customer base.

Software Engineer Intern

May 2024 – Aug 2024

BOTR Solutions

Vancouver, BC

- Reduced deployment time by **60%** by automating **CI/CD pipelines** with **AWS**, ensuring scalable delivery.
- Accelerated feature development by **30%** by designing and implementing comprehensive **E2E** backend systems for **REST APIs** using **Django** and **PostgreSQL**, reducing integration time and improving system reliability.
- Engineered a **Python ETL pipeline** for accurate, **scalable** patient-data migration, cutting costs **20%** and boosting efficiency by **35%**.

Head Teaching Assistant

Sep 2023 – Present

Dalhousie University

Halifax, NS

- Led and **mentored 10 TAs** to deliver high-quality lab sessions for **150+ students** by orchestrating weekly meetings and providing targeted guidance on technical and instructional challenges.
- Orchestrated weekly labs for 150+ students, reinforcing **Data structures & Algorithms** and **full-stack** concepts with **Java**, **PHP**, **Node.js**, and **Express** through guided, hands-on projects.

Leadership, Honors & Certifications

Gold Medal (1st Place) in the 2025 ICPC Canada Atlantic Contest

Amazon Web Services (AWS) Solutions Architect – Associate

Co-Founder & Co-President – Dalhousie CSL | President – Dalhousie MSA

Projects

OldBailey AI | [GitHub](#)

Next.js | Flask | AWS | TypeScript

- Accelerated historical research by utilizing **AI-driven** data analysis using **RAG** and **prompt engineering**, allowing researchers to gain insights into trends from the Old Bailey dataset in a fraction of the time.
- Architected a **LLM persona chat (judge/defendant/historian)** trained over **2,500+ records**, enabling **natural language** interrogation and richer, seminar-grade insights.