Brayden Yip

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TECHNICAL SKILLS

Languages: C, C++, Python, JavaScript, Java, SQL, Bash, Powershell
Frameworks/Libraries: TypeScript, React, Node.js, GraphQL, Mocha, Spring Boot, JUnit, Pytorch
Tools: Git, Linux, Docker, Kubernetes, AWS Lambda, AWS Glue, S3, Helm, Dynatrace, GCP, Makefile, GCC

EXPERIENCE

Undergraduate Research Assistant — May 2024 - August 2024
University of Guelph — *Guelph, ON*

- Developed novel **machine learning** models to optimize the FPGA/VLSI design automation process
- Optimized training time of neural network models by 75% using **Pytorch** and **CUDA**
- Analyzed GBs of data using **Pandas** and created scientific visuals with **Matplotlib**
- Deployed large-scale, parallelized neural network experiments using a Bash shell script

Software Developer Co-op — September 2023 - December 2023
D2L — *Kitchener, ON*

- Collaborated within a **cross-functional Agile team** working on the **Brightspace Data Platform**, providing tools for large-scale data analytics for a Learning Management System used by millions of students
- Developed visualizations and dashboards to provide usage insights to stakeholders, enabling customer-first product development
- Wrote an **AWS Glue ETL job** in Python, reducing dataset extraction time by 50%
- Migrated over 50,000 assets to AWS QuickSight using an **AWS Lambda** in **NodeJS**, reducing costs and improving UX
- Automated migration unit tests with **Mocha**, achieving 100% coverage

Software Engineer Co-op — May 2023 - September 2023
Clear Software — *Remote, Canada*

- Developed a full-stack single-page application with **React**, **TypeScript**, and **MariaDB** for a structured settlements firm.
- Optimized **GraphQL** queries to reduce loading times in our search engine by 30%
- Added and enhanced productivity tools and user experience with advanced **React**
- Overhauled custom React-based UI systems, improving extensibility and performance

Software Developer Co-op — January 2022 - September 2022
NCR — *Waterloo, ON*

- Maintained and improved a **multi-threaded** banking application in **Java** using the **Spring Boot** framework, providing services used by millions of bank customers simultaneously
- Optimized RESTful API calls resulting in a **2x improvement in mean response time**
- Created an Infrastructure-as-Code (IaC) solution to automate granular configuration of multi-tenant Kubernetes clusters, reducing cluster deployment time by 50%
- Wrote and deployed security updates on a **CI/CD pipeline** using Jenkins, Sonar, and Coverity
- Created high-quality automated unit and integration tests using **Cucumber**

PROJECTS

Roguelike Game | *Java*

- Developed a 2D Roguelike game using Java and relevant graphics/UI APIs like Swing

Molecule Visualization App | *C, Python, SQL, JQuery, Bootstrap*

- Developed full-stack web application to parse chemical compounds from molecular data using Python
- Rendered quasi-3D visualizations of complex molecules with a high-performance C library

EXTRACURRICULAR ACTIVITIES

Gryphon Aerospace Club, Controls and Software Team — 2021-present

- Developed software, computer vision, and control systems for the University of Guelph's AEAC Unmanned Aerial Systems National Student Competition entry
- Winner, Perseverance Award, AEAC UAS National Competition 2024
- Continuing to work post-graduation in an advisory role

GryphHacks, Events Coordinator — January-May 2023

- Organized workshops and speakers, fostering knowledge on topics like AI, career development, and cybersecurity

EDUCATION

University of Guelph — September 2019 - December 2024
Bachelor of Engineering, Systems and Computing — *GPA: 3.9/4 (89%)*