Brayden Yip

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TECHNICAL SKILLS

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

EXPERIENCE

Undergraduate Research Assistant   May 2024 - August 2024
University of Guelph   *Guelph, Ontario, Canada*
- Research Assistant in the UofG FPGA CAD group, developing graph neural networks (GNNs) to optimize FPGA placement and routing using the **Pytorch/Scipy stack** and boosted with **CUDA** cores
- Developed a neural network approach to find clusters (highly connected communities) in graphs, with applications in circuit desing, social networks, and biological systems
- Accelerated neural network training process using a distributed research computing system known as SHARCNET

Software Developer Co-op   September 2023 - December 2023
D2L   *Kitchener, Ontario, Canada*
- Wrote an **AWS Glue** job in Python to reduce extraction time of datasets by over 50%, as well as allowing for datasets of up to 5 TB
- Optimized extract-transform-load (ETL) flows for our data pipeline, providing thousands of institutions with valuable information on student engagement
- Developed an **AWS Lambda** in **Node.js** to migrate over **50,000 assets** from Domo to AWS QuickSight, saving hundreds of thousands of dollars on licenses, while also bringing accessibility to modern standards
- Designed and architected a unique system for migrating scatter plots to QuickSight, saving hundreds of hours compared to manual migration, improving coverage by over 90%

Software Engineer Co-op   May 2023 - September 2023
Clear Software   *Waterloo (Remote), Ontario, Canada*
- Developed a full-stack 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 filtering tools, made in React and GraphQL, cutting workflow time down by up to 25%
- Designed and implemented password strength rules to enable stronger security for the client
- Overhauled custom React-based UI systems, improving extensibility and performance

Software Developer Co-op   January 2022 - September 2022
NCR (now NCR Voyix)   *Waterloo, Ontario, Canada*
- Developed code for a **multi-threaded** Java microservice-based REST application using **Spring Boot framework**, which provides multi-channel banking services for millions of users.
- Optimized various API calls implemented in Spring Boot, which **resulted in 2x improvement in response time**
- Using Helm charts, created Infrastructure-as-Code (IaC) based Kubernetes solution to manage file systems of clusters on a multi-tenant basis, **enabling greater control of identity and access management (IAM)**
- Implemented CI/CD processes for code merges using Jenkins, preventing defects and security issues from being shipped
- Designed a new technical onboarding process, onboarding a dozen new engineers while reducing onboarding time by 50%

EDUCATION

University of Guelph   September 2019 - December 2024
Bachelor of Engineering, Systems and Computing   *GPA: 3.9/4 (89%)*
- Specialization in Software Development
- Controls Lead, Gryphon Aerospace Club
- Winner, Perseverance Award, AEAC UAS National Competition

PROJECTS

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

Spotify Recommendation app | *Python*
- Developed the backend and algorithm for an application that provides curated suggestions from a user's liked songs
- Won Best Presentation, Hack the Job 2022

Weather App | *Python, JQuery*
- Interactive app that fetches detailed weather data from locations on a map
- Implemented GUI and map interaction features from OpenStreetMap API
- Managed time effectively to complete within 48 hour hackathon time limit