Christopher McGale

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Education

Bachelors of Computer Science   **University of Waterloo 2023**
Distributed Computing, Network Security, Concurrent Programming, Data Structures & Algorithms, OS, OOP, Statistics

Bachelors of Business Administration   **Wilfrid Laurier University 2023**
Financial Analysis, Predictive Data Analytics, Supply Chain Management, Presentation, Teamwork, Debate

Employment

Full Stack Engineer | Co-Operators Insurance   Sept 2021 - Dec 2022
• Developed clean and robust web applications using **React.js**, **node.js**, **MongoDB**, and **PostgreSQL**.
• Designed and deployed scalable and resilient applications using **Kubernetes, Docker,** and **Helm** on **AWS**.
• Reviewed design and code of production level applications including **unit** and **end to end test suites** with **Jest**.
• Implemented and maintained **CI/CD pipelines** using **Jenkins**, **GitLab**, and **Kubernetes** for faster and reliable delivery.
• Identified and resolved systemic security issues such as faults in authenticating users, and data breaches.
• Designed **Relational Database schemas** for **low latency** queries and updates. Optimized existing **SQL** queries, resulting in a **~50% decrease** in average response time.
• Proposed and Developed email notification system to remind stakeholders of deadlines using **cron jobs.**

Systems Analyst Intern | CPA Canada   Jan 2020 - Sept 2020
• Conducted **requirements gathering**, **collaborating** to identify opportunities for process optimization and propose innovative solutions for enhancing **system efficiency** and **UX**.
• **ETL** of accounting data, combined from multiple sources using **Bash** and **Python scripts**, replacing manual data extraction saving **100+ hours** by principals per year.
• Organized data into presentations, documents and **MS Excel** spreadsheets to interpret and analyze data.
• Monitored **Azure App Service** performance using **Application Insights,** resulting in the identification of bottlenecks in **server resource utilization** and **database queries**.

Head Lifeguard | City of Toronto   Sept 2016 - Jan 2020
• **Led** teams of 6 staff through events of **+500** clients involving time-critical emergencies requiring **high attention to detail**.
• **Resolved** interpersonal conflicts among stakeholders to guarantee cohesive **teamwork** and **customer excellence.**

Technical Projects

Spam Classifier - Built and deployed a SGD ensemble LLM to detect spam messages. Employed the hadoop distributed file system and spark to process **2GB of text in 70 seconds**. Achieved **92% accuracy** on test data**.**
IoT maintenance Predictor - Designed and built 1. a **linear regression** model to predict the time until an IoT device would need repair and 2. an **ensemble decision tree (Random forest)** multiclass model to predict urgency of repair.
Taxi Trend Detector - Spark Streaming analysis with **Scala** of over **1.1 Billion** trips to timestamp rapid usage increases.
Multi-Source Personalized PageRank - Hadoop graph (**14,099,242** vertices and **117,394,777** edges) analysis. **Java**.
Bottling Plant Simulator - Simulation of **32 parallel clients** using **Multi-Threaded C++**. Handles interrupts and polling.
Chess - Developed an **OOP** implementation in **C++**. Includes computer players of varying difficulty and graphical display.
Root User Busting - School project to force root access on a remote server using 3 exploits:
• Buffer overflow.   • Race condition change of file.   • Overwrite of env vars.
DumbVM - Virtual Memory system of linux OS - Implemented the following on an embedded operating system
• Handling of a Full TLB.   • Separation of read-only memory.   • Non-contiguous physical memory.

Awards & Leadership Roles

Toronto Marathon 2023   **LIBC Student Mentor 2019 - 2021**
Canadian National IBJJF Finalist 2022   **Regional Champion Finance Division DECA 2019**
BJJ Instructor - Alliance BJJ 2022 - Current   **International Baccalaureate Calculus Award 2018**

Languages & Technologies

C/C++, Python, Bash, JavaScript, Angular, Java, React, Kubernetes, Docker, Node.js, TypeScript, Kafka, Rust, React, Node.js, Scala, Git, SQL, NoSQL, Windows, Linux, AWS, Hadoop, Spark, Hive