

Michael Qin

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Education

University of Waterloo

Bachelor of Software Engineering, 3.9 CGPA

Sept 2018 - May 2023

Work Experience

Geotab

Software Engineer

May 2023 - Present · Toronto, ON

- Engineered new API involving **SQL generation** to switch between different data processors using **C#** and **PostgreSQL** allowing clients to preprocess electric vehicle charging events, reducing load times by *95%* from 60 seconds to 3 seconds.
- Designed solution to extract and present third party charging station data to depot managers like Amazon and PepsiCo in real time using **HashiCorp Vault**, **.NET Core**, and **TypeScript**.
- Identified recurring on-call issue which caused our API to time out for key stakeholder by analyzing exception logs, API call history, and database performance dashboards. Communicated with client and determined resolution of rate limiting to reduce incidences to zero.
- Spearheaded developer experience improvement initiative, reducing flaky tests, speeding up GitLab CI/CD pipelines, and reducing memory usage of local application builds to accelerate development process, reduce work for deployment team, and improve quality of life.
- Facilitated communication with charging station integrators to gather requirements and align project goals.

Amazon

Software Developer Engineer Intern

May 2022 - Aug 2022 · Vancouver, BC

- Core backend developer on AWS Relational Database Service MariaDB Engine Team serving over *80,000 instances* covering petabytes of data.
- Led development in database log crash dump collection service for entire database fleet to automatically collect and aggregate stack trace data for developers to diagnose MariaDB issues, fix engine bugs, and to use for metrics.
- Piped crash dump data from custom MariaDB crash handler plugin to SQL log storage using **Lambda**, **TypeScript**, **CDK**, and **AWS services**.
- Exposed MariaDB crash metric data to **Grafana**, including frequency of crashes through trace hashing, crash types, error logs, and machine info.
- Provided key debugging information for open source MariaDB team, helping solve over 15 engine crash issues and reducing crash frequency by *8%*.

Arctic Wolf

Backend Software Engineer Intern

Jan 2022 - Apr 2022 · Waterloo, ON

- Engineered graceful shutdown protocol for **parallelized ETL log pipeline**, enabling the use of AWS spot instances in place of dedicated instances saving 90% of infrastructure cost and *\$20,000/month*.
- Introduced exception tracking and exponential backoff algorithm for data ingestion in **Java** for **Clickhouse** database with *~50 trillion rows*, preventing millions of data points lost every month.
- Developed data pipeline metrics including long running threads, processing exceptions, and database outages with **Prometheus** and **Grafana**.
- Wrote batch testing framework to verify performance and resilience of multithreaded data pipeline using **JUnit**, **JMockIt**, **SQL**, and **Clickhouse**.

Geotab

Software Engineer Intern

May 2021 - Aug 2021 · Waterloo, ON

- Designed a webapp end to end to create, retrieve and verify promotion codes by constructing backend stored procedures, API, and frontend UI over iterative feedback process with **C#**, **T-SQL**, **ASP.NET Core**.
- Carried out weekly releases to production and implemented process improvements with Gitlab, Octopus Deploy, and Appveyor for products serving 45+ major energy companies and 2000+ SmartCharge Rewards users.

Intuit

Software Engineer Intern

Jan 2020 - Dec 2020 · Mississauga, ON

- Integrated instant translations hook into Git repository, assisting translation team and reducing software release time from 24 hours to 30 minutes.
- Architected XML Transforming (XSLT) solution to convert Canadian to US tax forms crucial for large tech stack migration to US infrastructure.
- Automated tax form template replacement by designing a **Java code generation** tool using **Python**, **Regex**, and **XPath** to generate XSLT files eliminating hundreds of developer hours.
- Updated tax logic and frontend on TurboTax Online platform using **Java**, **XML**, **jQuery**, **JSP**, simplifying tax returns for over *13 million users*.

Skills

Languages: Java, Python, C#, SQL, C/C++, TypeScript, XML/XSLT

Technologies: AWS, CDK, .NET Core, Git, PostgreSQL, Docker, React, Spring, Google Cloud Platform

Misc: Toronto Mendelssohn Choir Professional Bass Singer, Ultimate Frisbee, Cooking