

# Matthew Geng

matthewgeng.com

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## Education

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### University of Waterloo

Sep. 2019 — April 2024

BACHELOR OF SOFTWARE ENGINEERING (BSE)

- Competitive **chess player** (1900 CFC) with **National awards** and Waterloo Men's Varsity Basketball player

## Experience

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### Splunk

May 2023 — Aug. 2023

SOFTWARE ENGINEER INTERN

San Francisco, CA

- Engineered a **gRPC** API to scale a Splunk deployment limit of **200,000/day** to **20,000,000/day** by implementing asynchronous messaging and autoscaling with **Kubernetes**, **SQS**, and **Go** multithreading
- Decreased average Splunk deployment time by **20%** through event hooks and concurrent optimizations

### Amazon Web Services

Jan. 2023 — May 2023

SOFTWARE ENGINEER INTERN

Vancouver, BC

- Scaled observability platform's daily capacity from **30K** to **150K** daily requests by replacing direct database requests with an **RPC** API proxy using **EC2** and **ECS** - eliminating customer outage!
- Improved analytics database query speed by **30%** by adding read-replica load balancing and sharding

### Amazon Web Services

May 2022 — Aug. 2022

SOFTWARE ENGINEER INTERN

Vancouver, BC

- Saved **\$1,500,000** per new AWS region built by reducing all **RDS** service builds from **2 days** to **30 seconds** by building an automated Java **SQL** execution service with **Spring** - first region released: [ap-south-2](#)

### D2L

Sept. 2021 — Dec. 2021

SOFTWARE ENGINEER INTERN

Toronto, ON

- Orchestrated critical infrastructure migration with **20+ AWS** services to a new region with **zero** downtime
- Implemented a new logging system with **80%** more app coverage using **Lambda**, **Firehose**, and **OpenSearch**
- Sped up **CI/CD** pipeline release time by **2x** by building dynamic and reusable **GitHub Actions**

### UW Blueprint

Sept. 2021 — Aug. 2022

SOFTWARE ENGINEER INTERN

Waterloo, ON

- Built production + staging infrastructure for [socialdiversity.org](#) app with **Terraform**, **AWS**, and **GitHub Actions**
- Created file-uploading **REST** API with **AWS S3** for **500+** users to submit sensitive files
- Developed **Stripe** payment system to support **~1000** monthly transactions

### CGI

Jan. 2021 — Apr. 2021

SOFTWARE ENGINEER INTERN

Toronto, ON

- Trained clustering-based machine learning model to provide financial insights for **60,000+** investor accounts
- Saved engineers **3 hours/day** by developing **Spark** pipeline to consolidate data from **Oracle** and **MongoDB**

### Praemo

May 2020 — Aug. 2020

SOFTWARE ENGINEER INTERN

Waterloo, ON

- Created a dashboard to monitor **80+** real-time data streams with **WebSockets** identifying **5** anomalies
- Implemented **JWT** authentication, Redis **Pub/Sub**, and a **multithreaded** process for background updates

## Projects

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### Photo Repository 🌐

May 2021

- Built containerized personal photo storage web-app with **Typescript**, **React**, **MongoDB**, **Docker** and **NGINX**

## Skills

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**Languages** Go, Python, C++, SQL, JavaScript, TypeScript, Java

**Technologies** Kubernetes, Docker, gRPC, AWS, Spark, MongoDB, Redis, PostgreSQL, MySQL, Terraform, NGINX