

Matthew Geng

SOFTWARE ENGINEER · UNIVERSITY OF WATERLOO

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Education

University of Waterloo

Waterloo, ON

CANDIDATE FOR BACHELORS OF SOFTWARE ENGINEERING (BSE)

Sep. 2019 - Present

- Past competitive **chess player** with **National awards** and Waterloo Men's **Varsity Basketball** player
- 2x President's Scholarship of Distinction

Skills

| | |
|----------------------|-------------------------------------------------------------------------|
| Languages | Python, C++, SQL, JavaScript, TypeScript, Java |
| Frameworks/Libraries | Flask, Node.js, Express, FastAPI, React.js, Next.js, Websockets |
| Technologies | Docker, Kubernetes, AWS, Azure, MongoDB, Redis, MySQL, Terraform, NGINX |

Experience

D2L

Sept 2021 - Present

SOFTWARE ENGINEER INTERN

Toronto, ON

- Completed critical migration of **AWS** infrastructure to a new region with zero downtime using **Terraform**
- Implemented new logging system with **60%** more coverage using **Lambda**, **Firehose**, and **OpenSearch**
- Reduced failed deployments by **half** by building dynamic and reusable **Github Actions**

UW Blueprint

Sept 2021 - Present

SOFTWARE ENGINEER

Toronto, ON

- Built production and development infrastructure with **Terraform** and respective CI/CD pipeline
- Created central **AWS S3** file-uploading REST api for **500+** users
- Developed new payment system with **Stripe** to support **~1000** monthly transactions

CGI

Jan. 2021 - Apr. 2021

SOFTWARE ENGINEER INTERN

Toronto, ON

- Cut deployment times by **70%** by launching production infrastructure with **Jenkins**, **Docker**, and **NGINX**
- Reduced development overhead by **50%** by engineering data pipeline from **Oracle** and **Mongo** with **Spark**
- Created a performance recommendation-engine for **200+** investment advisors and **60,000+** investor accounts
- Built a new risk-assessment web-app by applying a financial-risk [research paper](#) with **React** and a **Flask** REST API, increasing old assessment accuracy by **2X**; received funding, and VP approval

Praemo

May 2020 - Aug. 2020

SOFTWARE ENGINEER INTERN

Waterloo, ON

- Created a dashboard to monitor **50+** real-time client data streams and **30+** machine learning model outputs with **Vue**, **Flask**, **Redis**, **Mongo**, and **Websockets**, identifying **5** service outages that led to a critical bug discovery
- Simplified large-scale testing by spinning up company infrastructure with **Kubernetes** (microK8s)
- Implemented **JWT** user-authentication, **Pub/Sub** patterns, and a multithreaded API
- Built an unsupervised learning model to monitor time-series data from **30+** models to detect anomalies

Projects

Photo Repository

May 2021

WEB APPLICATION 🌐

- Built an SSL web-app to upload, download, and view images with **Typescript React+Redux**, **Mongo**, and **NGINX**
- Scaled with **dockerized** microservices, reverse proxy, **Mongo** GridFS, and chunked image API calls

Lecture Summary Timestamp Generation - HackThe6ix Winner

Aug. 2020

ML PROJECT 🌐

- Created a web-app to summarize uploaded lectures and return timestamps with **Vue**, **Express**, and **Flask**
- Wrote an **Azure** REST API to encode, stream, and generate video captions