

# Jacob Kim

👤 jacobkim.net | 📞 +1 (416) 668-5158 | ✉️ yh35kim@uwaterloo.ca | in jacobk52 | 🌐 jacobk52

## Education

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### University of Waterloo

Honours Bachelor of Computer Science (Co-op)

- Cumulative GPA: 3.95/4.00; Dean's Honours List

Sept. 2017 - Apr. 2022 (Expected)

President's Scholarship of Distinction

## Experience

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### Amazon

Software Development Engineer

- Developing core functionalities of the AWS Step Functions service to improve AWS workflows

Sept. 2021 – Dec. 2021

Vancouver, BC

### NVIDIA

Software Engineer

- Designed and developed an internal **real time search** and **analytics** data platform with **Apache Kafka**, used to ingest, store, analyze data for **100+** NVIDIA teams
- Built an internal **security token service** that returns a JWT based authentication token using RSA
- Rewrote a Java service in Python to avoid JVM startup time, led to **23x** speed inc., **5x** memory dec.
- Developed a service to test the validity of a TLS Certificate in a **Docker** container on an **NGINX** image

Jan. 2021 – Apr. 2021

Santa Clara, CA

### Uptake

Backend Developer

- Built **REST APIs** to manage the ticketing system for maintenance requests for **1M+** industrial machines
- Created an **API Gateway** for the ticketing system service that handles authentication, rate limiting, etc
- Refactored **10K+** lines of code in SQL Stored Procedures to TypeScript to improve structure and testing

June 2020 – Aug. 2020

Toronto, ON

### Square Enix Montreal

Machine Learning Developer

- Developed a classification algorithm using **random forest** to predict player lifetime value (**85%** acc. rate)
- Architected a clustering algorithm using **k-medoids** to analyze the behaviour of **1M+** players
- Built an application that retrieves and analyzes **50K+** weekly user reviews/feedback using **NLP**

Sept. 2019 – Dec. 2019

Montreal, QC

### Environment and Climate Change Canada

Full Stack Developer

- Led the full stack development of a cloud-based **ERP** web application, used by **50+** mining companies
- Designed the relational data model in SQL and developed **REST APIs** to handle CRUD operations
- Created multiple secure and responsive web forms to collect **350+** environmental reports/year

May 2018 – Dec. 2018

North York, ON

## Technical Skills

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### Languages

Python, Java, C++, C, C#, JavaScript, TypeScript, SQL, Bash

### Frameworks/Libraries

Node.js, Express.js, Kafka, Spark, Flask, PyTorch, TensorFlow, .NET

### Technologies

Docker, Kubernetes, Elasticsearch, AWS, GCP, GraphQL, MongoDB, Git

## Projects

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Waitless (McGill Code Jam 2019 - 3rd Place AI) | 🌐 repo

- A virtual waiting room for walk-in clinics with a queue system for patients to sign up and get notified
- Built a **lasso regression** ML model using **Sklearn** to predict waiting times and deployed it via **Flask**

TweetTrends | 🌐 repo

- A **data platform** that extracts and analyses trending topics on Twitter in **real time** for various locations
- Uses Twitter API for data retrieval, **Apache Spark** for data processing/streaming, **NLP** for text analysis