

# Alvin Lai

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## Skills

**Languages:** Python, C#, Java, C++, JavaScript, SQL

**Infrastructure:** MySQL, MongoDB, AWS, Docker

**Tools/Frameworks:** React, ASP.NET, Django, Git, NodeJS

**Certifications:** Software Design & Architecture Specialization, IBM AI Engineering, Toastmasters International

## Professional Experience

### Miovision - Full Stack Software Developer

Sept. 2020 - Dec. 2020

JavaScript, jQuery, C#, AWS, NodeJS, ASP.NET

Waterloo, Ontario

- Designed and developed an analytics library using **jQuery** and Segment API; analyzing user behavior for product improvements by capturing **20** unique events across **300+** daily users
- Developed a microservice using **React** and **AWS Lambda (NodeJS)** to upload and store study videos into **AWS S3**; increasing upload file size from 5GB to **5TB** and improving upload performance
- Built a support tool feature in an **ASP.NET** application to search and clone studies; decreasing support resolve times by **20%**

### Miovision - Software Developer

Jan. 2020 - Apr. 2020

C#, AWS, ASP.NET, SQL, Terraform, NUnit

Waterloo, Ontario

- Eliminated legacy application's security vulnerabilities by leveraging **AWS IAM** roles and **AWS Parameter**; automating role assignments and EC2 instantiation using **Terraform**
- Developed an event-driven service to monitor user login activity using **AWS Lambda (NodeJS)**, **EventBridge**, and **Datadog**
- Created automated unit tests with NUnit framework, increasing test coverage by **25%**; ensuring functionality is preserved

### Lumentum - Software Developer

May 2019 - Aug. 2019

Python, VB.NET, OpenCV, SQL

Ottawa, Ontario

- Developed a computer vision script (**OpenCV**) using **Python** to analyze tube sealing quality, eliminating manual validation of **500+ images** per day
- Built an automation application in **VB.NET** to aid in the manufacturing of optical devices, reducing cycle times by **15 minutes**
- Created a database migration shell script to ensure data consistency between QA and staging environments, removing the need to manually run stored procedures

### KingTiger Technology Inc. - Junior Engineering

Aug. 2018 - Dec. 2018

C++, Python, OpenCV, VBA

Toronto, Ontario

- Automated R.A.M inspection process by detecting module's orientation using **OpenCV (C++)**, saving **10+ minutes** of manual sorting
- Programmed a barcode scanner application using **Python**, **Z-Bar**, and **dlib**, allowing users to upload over **150** company assets

## Projects

### RateMyIdea - Serverless Application

- Engineered a serverless application using **React**, **GraphQL**, and **AWS Lambda** for users to post, comment, and rate project ideas
- Utilized Google Trends API to obtain search traffic data related to project ideas, creating user friendly graphs using the API data

### Messenger - Full Stack Web Application

- Developed a web application for communication between users utilizing token authentication, **RESTful** calls, and ORM (**mySQL**)
- Used **MVC** software design pattern; front-end generated using **React** and **HTML/CSS**, exposed REST API using **Django** back-end

### FishAI - Machine Learning Mobile (iOS) Application

- An iOS application developed in **Swift** used to classify fish species based on a photo taken by the user
- Created and trained deep learning **neural network (CNN)** using **Keras**, deployed model to **CoreML**, and created a script to build image dataset leveraging Bing API

## Education

### University Of Waterloo

Waterloo, Ontario

Candidate of B.ASc: Honours Mechanical Engineering - Artificial Intelligence Option

GPA: **3.9/4.0**

Graduating Sept. 2021

**Dean's Honours List:** F2017 & W2019 - **Top 10%** of class