

Alvin Lai

✉ ah2lai@uwaterloo.ca

🏠 ah-lai.github.io

🐙 github.com/ah-lai

📺 alvin-lai

Skills

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

Databases: MySQL, MongoDB

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

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

Professional Experience

Miovision - Software Developer

Sept. 2020 - Dec. 2020

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

Waterloo, Ontario

- Designed and developed analytics framework using **jQuery** and Segment API, capturing **20** unique events across **200+** daily users
- Developed a microservice using **React** and **AWS lambda (NodeJS)** to upload study videos to database (**S3**)

Miovision - Software Developer

Jan. 2020 - Apr. 2020

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

Waterloo, Ontario

- Developed an event-driven service to monitor user login activity using **AWS Lambda (NodeJS)** and **EventBridge**; metrics sent to Datadog
- Reduce security vulnerabilities by leveraging **AWS IAM** roles and **AWS Parameter**; automated role assignment and EC2 instantiation using **Terraform**
- Added automated tests with NUnit framework, increasing test coverage by **25%**

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 software in **VB.NET** to aid in manufacturing of optical devices, reducing process cycle times by **15 minutes** and manual operation
- Wrote a database migration shell script to ensure consistency between local and QA database, 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 search keywords from project ideas, providing market insights; generated data in intuitive graphs

Messenger - Full Stack Web Application

- Developed a web application for communication between users utilizing token authentication, **RESTful** calls, and ORM (**mySQL**)
- Software design pattern is based on **MVC** model; front-end generated using **React**, **HTML**, and **CSS** to call RESTful API, which communicates with a **Django REST** back-end

FishAI - 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