

EMPLOYMENT

Machine Learning Engineer	UWaterloo Autonomous Vehicle Research and Intelligence Lab	Spring 2020 – Summer 2020
<ul style="list-style-type: none">Built a facial recognition convolutional neural network using PyTorch with fast.ai and to detect driver state and impaired driving. Generated 100,000 data points by reimplementing both StarGAN and StackGAN (generative adversarial network) on Kaggle datasets using GCS (Google Cloud Services) cloud TPUs.Ported Autonomoose's autonomous driving model from MapleSim to VI-CarRealTime for simulationDesigned and built a machine learning pipeline using Azure Machine Learning, NumPy, Matplotlib, and OpenCV with Python and a data management and collection system using PostgreSQL, JDBC, and MATLAB for an automated workflow to train new autonomous driving models.		
Autonomous Controls Engineer	Remora Inc.	Winter 2020 – Summer 2020
<ul style="list-style-type: none">Building an autonomous marine drone to collect garbage from rivers, lakes, oceans. Based in San Diego, CA.Creating a local and global path planning algorithm, using computer vision, GPS, ArduPilot, MAVLink Data Streams, rangefinders, and IMUS. Congregating data inputs with ROS to produce a consistent path routing.Training object tracking TensorFlow model to plan garbage collection. Integrating image recognition with Received Signal Strength Input, Analog Airspeed Sensors to account for wave model deformations.		
Lead Software Developer	Cozii Proptech	Spring 2020 – Summer 2020
<ul style="list-style-type: none">Leading development on Android app from ground up using Kotlin for Backend, Microsoft SQL for Database, and Flutter for Frontend. Refining IOS Backend using Swift for native code and Python for server-side code.Researching and implementing Stripe with Escrow payments, background checks with Sterling Backcheck, and both SMS and messaging app notifications with Twilio. Hosting cloud database on Amazon Web ServicesBuilding a machine learning recommendation model to suggest tenants, properties to rent, landlords to contact, and renovators/handyman based on user preferences and actions. Using PyTorch with Spark.		
Software Engineer, Intern	Maple Precision	Winter 2020 – Spring 2020
<ul style="list-style-type: none">Worked on Full Stack development for the Equator Web App. Built login system, customer support live chat, and user profile and project portfolio. Improved existing features such as 3D view and OAuth tokens.Built a layered search engine with an implementation of PageRank. Migrated key server-side map rendering processes from the GPU to CPU, increasing CRI efficiency by 76% and time efficiency by 53%.Developed 3D geospatial maps and models through quantized meshing of lidar point clouds, satellite imaging, and 2D maps applying custom made median cut octree algorithms on datasets.		

DESIGN TEAMS

Autonomous Vehicle Engineer	UWAF (General Motors EcoCAR 3)	Fall 2019 – Spring 2020
<ul style="list-style-type: none">Programming autonomous sensor software using C++ in ROS (Robot Operating System) on Linux to perform sensor diagnostics and sensor fusion in order to compete in the EcoCAR Competition.Using MATLAB and Simulink to create vehicle information simulations in order to test vehicle's autonomous capabilities and performance across anomaly and edge scenarios.Processing CAN bus (Controller Area Network) data using C++ data structures and algorithms such as PCA and custom A* in ROS to counteract failures within microcontrollers and vehicle system.		
Linear Induction Motor Team Lead	Waterloop (SpaceX Hyperloop)	Fall 2019 – Spring 2020
<ul style="list-style-type: none">Leading a team of over 25 students prototyping, designing, and building a linear induction motor, creating a new method of transportation to compete in the SpaceX Hyperloop Competition. Integrating software and hardware subsystems to optimize wave current flow and achieve a closed loop design with state estimation.Programming and wiring embedded systems with Magnetometer, Hall Effect sensor, Digital Temperature sensor, and IMUs. Creating computer simulations of the LIM using ANSYS to apply Maxwell's equations.		

EDUCATION

University of Waterloo

2019 – 2023

- B.E **Mechatronics Engineering** with Minor in **Software Engineering** and option in **AI**. In-major GPA: 3.86
- Courses Completed: Data Structures; Algorithms; Databases; Functional Programming; Embedded Software

PROJECTS

Reach – Internet Access Through SMS

Fall 2019 – Winter 2020

- Built an automated program using **Node.js** that allows users to access the internet features through text messaging, including: Directions, Weather, News, Wikipedia Articles, Unit and Currency Conversion. Used **Google Maps and News APIs** and **Fixer API** for program features.
- Used **Google Firebase** to host my program on cloud servers to process and compute user request and **Twilio** to automatically send and receive SMS.

Train μ – Machine Learning Sports Trainer

Winter 2020

- Built, trained, and ran a **machine learning model** to analyze sports footage and help users improve athletic form, achieving **top 3** out of **over 100 teams** at **Hack the Valley 4**.
- Used **TensorFlow** and **Openpos** for machine learning and dataset. Used **Python**, **Google Cloud Servers**, and **Django** for backend, and **JavaScript**, **HTML**, and **React** for frontend.

Responsum – Educational Software

Fall 2019 – Summer 2020

- Building an educational **Web Application** with live surveying, forums, and learning resources. **Launching** on **University of Waterloo Servers** for use in Professor Igor Ivkovic's class of **135 students**.
- Utilizing **MySQL** and **Node.js** for backend database and **REST API**. Using **React**, **HTML**, **CSS**, and **JavaScript** for frontend UI development. Over **13,000 lines** of code, with more improvements ongoing.

Syrinx – Malignant Cyst Detector

Winter 2019 – Spring 2020

- Using **TensorFlow** and **NumPy** along with published **medical MRI data sets** to build a **neural network** to differentiate between a safe benign cyst and a harmful malignant cyst and output percentage chance.

Axel – Autonomous Chess Playing Robot

Fall 2019 – Winter 2019

- Programmed **event-driven software** for chess robot using RobotC along with mechanical movement, HMI, database of games played, and embedded software.
- Integrated **Stockfish Artificial Intelligence API** using C++ for a Player vs Computer Mode.

SKILLS

Experienced

Java, Python, JavaScript, C++, Node.js, C, Firebase, PostgreSQL, Git, Kotlin, MongoDB, Google Cloud Servers, Linux, PHP, Amazon Web Services, TensorFlow, PyTorch, GAN, Data Structures, Algorithms, REST API, MySQL

Intermediate

TypeScript, React, HTML5, CSS, XML, Bash, Docker, ROS (Robot Operating Software), Django, Keras, Redis, Flutter, Unix, Swift, Matlab, Simulink, Arduino, Hadoop, mvvm, Unit Tests, Threading, Concurrency, Spark

Learning

Figma, WebGL, Potree, Chart.js, PyTorch, Agile, Entwine, AJAX, Agile, Kaggle, Spark, CUDA C, Ruby on Rails

AWARDS

- **Top 3/100 Teams: Hack the Valley 4 Hackathon 2020**. Built **Train μ** and awarded prize from Facebook.
- **1st Place: Waterloo Engineering Competition (Senior Division 2019)**. Created an **autonomous skyjack robot**.
- **1st Place: Hack the North 2019** Deloitte Coding Challenge, a lightning coding challenge during the hackathon.
- **1st Place: Vancouver Math Olympiad 2019**. Competed in a Vancouver Olympiad math competition.
- **Top 4/50 Teams: BCIT Vex Robotics Competition 2019**. Designed and constructed an autonomous robot.
- **B1 DELF Certificate: Certified French Professional Working Proficiency** by France's Ministry of Education.

NOTE

All **title names** and **underlined words** are **linked** (employment, projects, and design teams) (click [Reach](#)) for info!
Thank you very much for reading my resume! I'd love to join your team!