Amy Hu

University of Waterloo 3A Computer Engineering

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🎓 Education

University of Waterloo, Computer Engineering, Candidate of BASc SEP 2021 - APR 2026

Relevant Courses : Computer Architecture, Computer Networks, Real-Time Operating Systems, etc

☰ Skills

Softwares	Golang, C/C++, Java, C#, CMake, GDB, Linux, Python, HTML, CSS, JavaScript, SQL, MATLAB
Frameworks	AWS, React, ASP.NET, Flask, FastAPI, Unity, PyTorch, TensorFlow, Swing, Bootstrap, Kafka
Databases	MySQL, PostgreSQL, SQLite, Redis

💼 Experience Find more projects at : 🔗 trotyl.xyz/projects

Software Developer (Core Product Team), Remote, Adentro Inc MAY 2024 - PRESENT

> Developed a **URL shortener** service in **Golang**, returning MD5-encoded hashes with a collision probability of less than 1 in 10,000.
> Created a **hook receiver** server in **Golang** to handle HTTP requests from third-party webhooks.
> Implemented a validator for received messages, converting these calls into a standardized Google **Protobuf** format, and writing them to **Apache Kafka**.
> Utilized **Terraform** and **WAF** files to configure and deploy servers on **AWS**.

Software Developer (Central Maxon App Team), Waterloo, Maxon Computer SEP 2023 - DEC 2023

> Developed a program to capture service versions during user installation and update events.
> Enhanced data analytics accuracy in the **C++** codebase by implementing configurable methods (via macros, configuration files, and environmental variables) to determine when data should be captured.
> Created and executed **Google unit tests** for user identity management events.
> Addressed **GDPR** compliance concerns by fixing various data-sensitive bugs in analytic system.

Front-End Developer, North York, Sparklease Inc. JAN 2023 - APR 2023

> Developed the vehicle detail page, leveraging **RESTful API**, **ASP.NET MVC**, and user information upload features with **JavaScript** and **AJAX**.
> Implemented a dynamic calculator with a draggable progress bar, applying lease/finance monthly payment algorithms using various **canvas** widgets.
> Improved website performance by over **60%** through optimizations such as Lazy Load, code streamlining, text compression, and utilizing crawlable links for better SEO.

Web Developer, Toronto, eButterfly MAY 2022 - AUG 2022

> Developed the front-end for eButterfly's website and admin panel using **React** and server-side with **Node.js**, featuring user-submitted butterfly encounters and data filters.
> Led a team of 5 in the e-butterfly lab project, providing backend and environment setup assistance. Self-taught **Flask** and **FastAPI** during this project.

🖥 Student Design Team

Autonomy Team Lead, Waterloo Aerial Robotics Group, Waterloo JAN 2022 - MAY 2024

> Represented the team at the **2024 National Annual UAS Student Competition**, securing **1st place** in both phase 1 design paper and phase 2 flight assessment, as well as receiving the **Judge's Award**.
> Led a team of over 20 members in delivering software for UAVs to derive information from images and videos, coordinate inputs, and develop the ground-side GUI and drone telemetry system.
> Prototyped the drone's autonomous air-side system, featuring **multiprocessing**, geolocation, and cluster estimation modules to accurately locate landing pads.
> Collected and trained a dataset of over 12,000 UAV landing pad images to develop a **YOLOv8**-based object detection model, achieving over **90% mAP**, and implemented a **deep neural network** in **TensorFlow** to identify 10 different object classes.