








Amy Hu

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EDUCATION

University of Waterloo, Computer Engineering, Candidate of BASc SEP 2021 - AUG 2026
Relevant Courses : Distributed Computing, Networks, Reinforcement Learning, Real-Time Operating Systems, Compilers, etc

SKILLS

Softwares Golang, C/C++, Java, C#, CMake, GDB, Linux, Python, HTML, CSS, JavaScript, TypeScript, SQL
Frameworks AWS, gRPC, REST API, React, Node.js, Flask, Unity, PyTorch, Kafka, Airflow, Three.js
Others Git, Docker, Kubernetes, Bazel, WebGL, OpenGL, MySQL, PostgreSQL, SQLite, Redis

EXPERIENCE

Incoming Software Engineering Intern, New York, Rippling JAN 2026 - APR 2026

Software Engineering Intern, Austin, Tesla SEP 2025 - PRESENT

- Integrated host finder into Tesla’s AI chatbox as an **AI agent**, allowing users to query host details and receive LLM responses.
- Solved service silent kill issues by applying pod auto-scaler and resource limit strategies, improving system stability and reliability.

Software Engineering Intern, Mountain View, Kodiak Robotics JAN 2025 - APR 2025

- Architected a concurrent **video compression** service in **C++** within a distributed system to convert H265 keyframes into WebP and JPEG, enabling configurable compression types and ratios to balance quality and performance.
- Developed a data pipeline in **C++** to extract real-time driverless data, calculate autonomous mileage, and ingest records into an **Elasticsearch** cluster on **AWS**. Leveraged **React** based timelines and graphs for streamlined visualization and analysis.
- Designed and implemented multi-trailer 3D replay in **Three.js** and **WebGL**, applying trigonometry to accurately calculate positions with minimal data and diverse trailer dimensions.
- Utilized **OpenCV** to process and annotate video feeds with real-time autonomy state indicators, improving situational awareness.
- Created an **Apache Airflow** DAG that tags requesters in Slack upon log snippet creation, significantly reducing response times.
- Engineered a **C++ CLI** tool for on-truck process management, improving operational efficiency and reducing downtime.

Software Development Intern, Remote, Adentro Inc MAY 2024 - AUG 2024

- 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** with a validator in **Golang** to handle HTTP requests from third-party webhooks, responsible for processing events such as email opens, clicks, and status updates, and converting these calls into a **Protobuf** format to write them into **Kafka**.
- Developed a **gRPC server** for managing account configurations, using in-memory **caching** for efficient data validation and retrieval.
- Utilized **Bazel**, **Terraform** and **WAF** to configure and deploy servers on **AWS**, and created **PostgreSQL** tables for data storage.

Software Development Intern, Waterloo, Maxon Computer SEP 2023 - DEC 2023

- Developed a version-capturing mechanism in **C++** that triggers on installation/update events, enabling system changes analytics.
- Enhanced data accuracy by implementing configurable capture conditions (via macros, config files, and environmental variables).
- Created and executed **Google unit tests** for user identity management events.
- Streamlined version update processes with **Bash** and **Python** scripts, reducing manual overhead and minimizing errors.

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

- Developed vehicle detail and lease calculator using **RESTful API**, and **ASP.NET MVC**, incorporating payment algorithm.
- Improved website performance by over **60%** through optimizations such as Lazy Loading, code streamlining, and text compression.

Web Development Intern, Remote, eButterfly MAY 2022 - AUG 2022

- Developed a log table with server-side pagination, filtering, and indexing using **React** and **Node.js** to ensure fast data retrieval.
- Led a team of 5 in a statistical display project, providing backend and environment setup assistance for **Python Flask** and **FastAPI**.

STUDENT DESIGN TEAM Find more projects at : trotyl.xyz/projects

Autonomy Team Lead, Waterloo, Waterloo Aerial Robotics Group 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 a multi-processing computer vision system for UAVs to derive information from images, videos, and coordinate inputs, along with a ground-side GUI and drone telemetry system.
- 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.