Amy Hu

🎓 **University of Waterloo** 3A Computer Engineering

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≡ Skills

Softwares	Java, C/C++, C#, CMake, GDB, Linux, Python, Bash, HTML, CSS, JavaScript, SQL, MATLAB
Frameworks	React, ASP.NET, Flask, FastAPI, Unity, jQuery, PyTorch, TensorFlow, Swing, Bootstrap, Hexo
Databases	MySQL, PostgreSQL, SQLite, Redis
Tools	Git/GitHub, Docker, LaTeX, IntelliJ Idea, XCode, Pycharm, VS/VSCode, SSMS, Railway, Figma

💼 Experience

Dec 2023 — Sep 2023

Software Developer (Maxon App Team), Waterloo, Maxon Computer

> Captured **MxAnalytics** version details into database when installation and update events are triggered.
> Improved data analytic accuracy in the **C++** codebase by adding configurable options (via macros, configuration files, and environmental variables) to control whether MxAnalytics should send data.
> Automated version update processes by writing efficient **Bash** and **Python** scripts.
> Addressed GDPR compliance concerns by fixing various data-sensitive bugs in MxAnalytics.
> Conducted **Google unit tests** for 10 Duke licensing events.
> Fixed **Vue.js** and **JavaScript** GUI issues, including RLM mode banner display and product visibility refinements.

Apr 2023 — Jan 2023

Front-End Developer, North York, Sparklease Inc.

> Developed the vehicle detail page and WeChat **MiniApp**, leveraging **RESTful API** and **ASP.NET MVC**, and user information upload features through **JS** and **AJAX**.
> Implemented a dynamic calculator featuring a draggable round progress bar, applying lease/finance monthly payment algorithms with various **canvas** widgets.
> Achieved a **60+%** improvement in website performance by implementing optimizations such as Lazy Load, code streamlining, text compression, and utilizing crawlable links to boost SEO.

Aug 2022 — May 2022

Web Developer, Toronto, eButterfly

> Developed eButterfly's website and admin panel's front-end in **React** and server in **node.js**, featuring user submitted butterfly encounters and data filters.
> Finalized the **swagger documentation** in the company's server.
> Led a group of five people with another colleague in the e-butterfly lab project by providing helps and advises with the back-end and the environment setup. Self taught **Flask** and **FastAPI** during this.

🖥 Student Design Teams and Projects   Find more personal projects at : 🔗 trotyl.xyz/projects

Autonomy Team Lead, Waterloo, Waterloo Aerial Robotics Group   Jan 2022 - Present

> Leading the autonomy team with 20+ members to deliver software that help UAV derive information from image, video, as well as coordinate inputs, and received **4th** place in AEAC 2023.
> Prototyped the drone's autonomous air-side system, featuring **multiprocessing**, geolocation, cluster estimation modules and etc to correctly locate position of landing pads.
> Overseeing the team in design and develop the ground-side GUI and data-telemetry system with **Figma** and **PyQt5**.
> Collected and trained a dataset of 12,000+ UAV landing pad images to train a **YOLOv8** based object detection model and achieved a **90%+ mAP**.
> Implemented a program to classify images using a **deep neural network** in **TensorFlow** to identify 10 different types of object classes.

Local Area Network Chatting Program ⦿ github.com/trotyl15/chatclient   Dec 2020

> Built client application using knowledge in **Java sockets**, and **Java OOPs** concept to connect users to a LAN chatting program.
> Developed desktop application in **Java** to view and speak to all users as well as send private messages.

The MadHouse Adventure Game ⦿ github.com/trotyl15/themadhouse   Dec 2019 - Jan 2020

> Created a interactive RPG adventure game all by myself using **Java Swing** and developed game logic using **Java OOPs** concept.
> Used **PhotoShop** to create a visually appealing game design.