

in hongjunyun

Website: https://git.io/JXa1p GitHub: https://git.io/JXaXP Email: a2vun@uwaterloo.ca ☐ Phone: 226-507-9755

# **Skills**

Programming Languages: C, C++, JavaScript, Python, JSON, ARMv7 Assembly, VHDL, Bash, SQL Platform/Devices: AWS, UNIX, MQTT, PLC, CUDA, SVN, Unreal Engine 4, CARLA, DynamoDB, ARM Cortex-M3 Framework/Library: Node.js, Express.js, WebSocket, PySide2, TensorFlow, PyQt, OpenCV, Boost Python, Git, FastAPI

# **Experience**

# Software Backend Developer 🔗

## **Escape Platforms**

June 2023 - August 2023

- Developed API for the platform functionality using AWS services, such as AppSync, Lambda and DynamoDB
- Developed vital comment and chat features for a serverless SNS service using Node.JS and APIs
- Proposed enhanced database structure that can handle high demand on acceptable price by utilizing cache
- Wrote and deployed unit tests for Node.JS Lambda Codes and mapping for AppSync to ensure reliability

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January 2023 - August 2023

- **FIRST Robotics Team 7722** 
  - Guided nine high school students in programming embedded software and composing algorithm to meet objectives
  - Applied methods to reduce the sensor noises, such as bandpass filter, median filter and sensor fusion
  - Developed an algorithm that combines gained data to perform autonomous driving and scoring with 93% success rate
  - Experienced embedded software, onboard computer vision and RTOS programming in electrically noisy environment

## 6G R&D Co-op

#### Huawei

September 2022 - December 2022

- Developed API for internal use, called from Python and communicated with Carla Server using C++ and Boost
- Created the **GUI** using **PyQt** for the 6G R&D department to monitor and control the **Unreal Engine** simulation
- Designed a new ray tracing technology that detects objects interacting with high-frequency radio signal in the CARLA simulation better to interpret the real world within the 6G simulation using Unreal Engine 4
- Experienced large codebases and how to digest the associated complex logics

#### Software Developer Co-op 🔗

## Stackpole International

January 2022 - April 2022

- Reduced communication overhead between PLC and Host computer by 30% using a caching mechanism
- Engineered GUI, Machine Learning, and telemetry software, effectively reducing final product defects by 21%
- Utilized Python, PySide2, OpenCV, TensorFlow, and PyTorch for Omron PLC and GPU servers
- Applied knowledge related to the memory address, binary numbers and other mathematical knowledge while programming for PLC controllers through the ethernet connection to ensure the security of communication

#### **Projects** *∞*

# Find My Pill Platform

October 2022 - December 2023

- Developed and designed RESTful API using Python and Flask to communicate with the Flutter frontend
- Applied 3NF normalization of database to enhance the response time when handling large data by 23.7%
- Designed the platform architecture to utilize microservices to maximize the reusability of code and stability
- Constructed the custom recommendation algorithm to be used when the user entered the portion of the text

## **Education**

# **University of Waterloo**

Candidate for Bachelor of Applied Science in Computer Engineering

September 2021 - June 2026

Relevant courses: Algorithms and Data Structures, Embedded Microprocessor Systems, Discrete Math and Systems Programming