# Andy Yun

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## 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

## Employment

**Software Backend Developer Co-op**
**Escape Platforms -** Remote, Toronto, Canada — June 2023 – August 2023

- Developed **API** for the platform functionality using **AWS** services, such as **AppSync**, **Lambda** and **DynamoDB**
- Constructed comment and chat functionalities for a serverless environment 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 the reliability

**6G R&D Co-op**
**Huawei -** Kanata, Canada — 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 and created a new **ray tracing** technology that can detect the objects which reflect the light 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 -** Ancaster, Canada — January 2022 – April 2022

- Reduced the communication overhead between PLC and Host computer by 30% by using a caching mechanism
- Built GUI, Machine Learning and telemetry software to reduce the human error involved in the production
- 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

## Experience and Projects

**FIRST Robotics Team 7722 Computing Mentor**
Waterloo, Canada — January 2023 – August 2023

- Guided high school students in programming embedded software and composing algorithm to achieve the goal
- 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

**Find My Pill Platform**
Waterloo, Canada — 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

- 2021 University of Waterloo President's Scholarship