Andy Yun

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Skills

Programming Languages: C, C++, JavaScript, Python, JSON, ARMv7 Assembly, VHDL, Bash, SQL
Platform/Devices: AWS, UNIX, LINUX, MQTT, PLC, CUDA, SVN, DynamoDB, ARM Cortex-M3, NIOS II Softcore, STM32
Framework/Library: Node.js, Express.js, WebSocket, Jest, PyTorch, Qt, OpenCV, Boost, FastAPI, GraphQL, Git

Experience

Software Backend Developer

Escape Platforms   June 2023 – August 2023

- Developed 10 **RestfulAPI** endpoints for comment, chat and internal purposes on **AWS** services
- Developed API and data flow such as **AppSync**, **Lambda** and **DynamoDB,** using **Node.js** and **TypeScript**
- Implemented **GraphQL** to streamline operations, delivering a more seamless **serverless** SNS experience
- Composed and deployed **unit tests** for Node.JS **Lambda** Codes and **mapping** for AppSync to ensure reliability

First Robotics Programming and Computing Mentor

FIRST Robotics Team 7722   January 2023 – August 2023

- Guided 9 high school students in programming **embedded software** and composing algorithms to meet objectives
- Created **ISR** to compensate and re-calibrate the sensor noises using **sensor fusion** of gyroscope and distance sensors
- Developed an algorithm combines sensor data to perform robot movement planning with **93%** success rate
- Experienced **embedded** software, **onboard computer vision** and **RTOS** programming on roboRIO and ESP32

6G R&D Engineer Co-op

Huawei Technologies Canada   September 2022 – December 2022

- Developed internal **APIs**, callable from **Python**, and interfaced with the Carla Server using **C++14** and **Boost** libraries
- Designed and implemented a user-friendly GUI using **PyQt** to monitor and control the Unreal Engine simulation
- Designed **ray tracing** algorithm that detects objects interacting with high-frequency radio signals in **CARLA** simulation
- Enhanced the realism of the Unreal Engine 4 simulation used for 6G antenna development
- Gained experience in navigating and understanding complex codebases and intricate logic structures

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%**
- Leveraged **Python**, **PyQt6**, **OpenCV**, and **PyTorch** to develop applications for Omron **PLC** and **GPU** servers
- Constructed light ANN model to be ran on **Jetson Nano** paired with PLC to reduce server load and response time

Projects

Find My Pill Platform   October 2022 – December 2023

- Developed and designed a **RESTful API** using **Python** and **Flask**, facilitating seamless communication with **Flutter**
- 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
- Designed and implemented a **custom recommendation algorithm** for user-generated text input

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