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, Jest, PySide2, TensorFlow, PyQt, OpenCV, Boost Python, FastAPI

Experience

Software Backend Developer
Escape Platforms June 2023 – August 2023

- Developed 10 **API** endpoints for comment, chat and internal purposes on **AWS** services, such as **AppSync**, **Lambda** and **DynamoDB,** using **Node.js** and vanilla **JavaScript**
- **Proposed data flow structure** that can handle high demand on acceptable price and consistency utilizing **cache**
- 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
- 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 Engineer Co-op
Huawei Technologies 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 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