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, PyTorch, PyQt, OpenCV, Boost, FastAPI, GraphQL

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**
- Implemented **GraphQL** to streamline operations, delivering a more seamless **serverless** SNS experience
- **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 internal **APIs**, callable from **Python**, and interfaced with the Carla Server using **C++** and **Boost** libraries
- Designed and implemented a user-friendly GUI using **PyQt** to monitor and control the Unreal Engine simulation
- Designed a new **ray tracing** technology that capable of detecting objects interacting with high-frequency radio signals in the **CARLA** simulation, enhancing the realism of the 6G environment within Unreal Engine 4
- Gained valuable 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**, **PySide2**, **OpenCV**, and **PyTorch** to develop applications 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 a **RESTful API** using **Python** and **Flask**, facilitating seamless communication with **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
- 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