Emily Ngo

emilyngo80@gmail.com | linkedin.com/in/emily-ngo-/ | github.com/emilyngo001 | emilyngo001.github.io/

Education

University of Washington Seattle, WA

Bachelor of Science in Computer Engineering *Sept 2022 - Jun 2026*

Current/Previous Courses: Digital Design, Software Design and Implementation, Hardware/Software Interface, Data Structure & Algorithms, Systems Programming, Artificial Intelligence, Signal Conditioning, Data Management, Autonomous Robotics, Computer Security, CAD, Embedded Systems, SWE, GIS & Mapping, Wireless Communication

Skills

Languages: Python, C/C++, Java, Verilog, JavaScript/TypeScript, HTML/CSS
Tools/Frameworks: Git, Linux, React, Node.js, Flutter, Figma, QGIS
Embedded: Raspberry Pi, Arduino, ESP32, STM32, KiCad, ROS, FreeRTOS

Experience

Clear Ascent Corp. July 2025 - Present

Systems Engineering Intern *Seattle, WA*

- Researching and developing autonomous drone systems powered by hydrogen cell engines
- Contributing to system architecture and feasibility studies for scalable UAV deployment

University of Washington - Sensor Systems Laboratory January 2024 - Present

Undergraduate Researcher, Summer Intern *Seattle, WA*

- Optimized acoustic pressure values using hill climbing and simulated annealing algorithms
- Collected and Analyzed temperature and humidity data to assess system performance under varying conditions
- Designed and prototyped a humidity control system by creating a custom dehumidifier casing in Autodesk Inventor and integrating a Raspberry Pi for automated sensing and regulation

UWROV - Underwater Remotely Operated Vehicles October 2024 - June 2025

Electrical Engineer, Mechanical Engineer *Seattle, WA*

- Redesigned PiHat **PCB** using **KiCad** to improve system performance and integration with underwater vehicle components, reducing board. size by 40% for onboard deployment
- Soldered and desoldered electronic components for PCB assembly and prototyping
- Engineered mechanical designs for robotic manipulators using **Onshape**, enhancing operational precision

Impinj January 2025 – June 2025

Embedded Systems Engineering Co-op *Seattle, WA*

- Collaborated in a team of six to develop an embedded system for real-time communication with **FPGAs** emulating RAIN RFID tags in scalable, pre-silicon test environments
- Executed system code on a microcontroller with RTOS for low-latency SPI control of RF parameters (phase, attenuation) and realistic tag behavior simulation
- Reduced RFID tag testing time by 47% by replacing physical fabrication with configurable emulated tags, accelerating iteration and interference analysis

SproutSynch October 2024 – May 2025

Hardware Engineer *Seattle, WA*

- Designed an automated plant watering system using Raspberry Pi and Arduino Uno, integrating electrical components to water multiple plants
- Developed embedded **Python** firmware to control water pump operation and schedule watering
- Designed plant switching mechanism for switching one plant to another with an embedded system and 3D designs

Projects

FM Radio Tuning System | *Python, C++, Arduino*

- Built a car-style FM radio using RTL-SDR and Arduino Mega with buttons, a potentiometer, and LCD for frequency tuning and display
- Implemented real-time serial communication between Python and Arduino for seamless frequency tuning

Smart Glasses | *ESP32-S3, BLE, Java, C++, Inventor*

- Collaborated in a team of 4 to build smart glasses using the Seeed XIAO ESP32-S3
- Integrated BLE and cloud APIs for real-time speech-to-text and multilingual translation, enabling accessibility for non-English speakers