Emily Ngo

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

Education

University of Washington **September 2022 – June 2026**
Bachelor of Science in Computer Engineering *Seattle, WA*

Skills

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

Experience

University of Washington **September 2025 – Present**
Teaching Assistant *Seattle, WA*

- Teaching Assistant for CSE/EE 475 (Embedded Systems Capstone) and EE 542 (Advanced Embedded Systems Design)
- Mentor 30+ ECE and CSE students on end-to-end embedded systems development, providing hands-on support in firmware design, sensor integration, and system testing

Clear Ascent Corp. **July 2025 – Present**
Systems Engineering Intern *Seattle, WA*

- Contributing to system architecture and feasibility studies for hydrogen-powered autonomous UAVs
- Supporting integration of hardware, software, and safety requirements into scalable system design

University of Washington - Sensor Systems Laboratory **January 2024 – Present**
Undergraduate Researcher, Summer Intern *Seattle, WA*

- Applied optimization algorithms (hill climbing, simulated annealing) to acoustic systems to improve performance
- Designed and prototyped a temperature and humidity control system by integrating Raspberry Pi with sensors and developing custom enclosures for automated monitoring and regulation
- Conducted system validation under variable conditions, aligning experimental results with expected performance

UWROV - Underwater Remotely Operated Vehicles **October 2024 – Present**
Electrical Engineer, Mechanical Engineer *Seattle, WA*

- Designed and optimized PiHat **PCB** for underwater robotics, reducing size by 40% and improving integration
- Developed robotic manipulator designs in **Onshape**, enhancing operational precision in deep-sea tasks
- Performed PCB assembly, soldering, and component testing to validate designs for real-world deployment

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*

- Built an automated irrigation system with Raspberry Pi and Arduino Uno, supporting multiple plants
- Programmed embedded **Python** firmware for scheduling and pump control, improving efficiency of watering cycles
- Designed switching mechanism with embedded hardware and 3D modeling for scalable system integration

Projects

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

- Built a car-style FM radio using RTL-SDR and Arduino Mega, enabling real-time 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*

- Developed accessible wearable with BLE and cloud APIs for real-time multilingual translation and speech-to-text
- Collaborated in team of four, integrating hardware and software to expand accessibility for non-English speakers