Silas Waxter

541-286-0836 | silaswaxter@gmail.com | github.com/SilasWaxter

Education

Oregon State University **June 2024**

Electrical and Computer Engineering B.S. and Computer Science Minor *GPA: 3.53*

Skills

Software	C, C++, Python, Lua, Bash, Git, Gitlab CI, Markdown, Make, Bazel, Docker, Linux, Vim, SPICE, EDA (KiCAD), CAD (Inventor, OnShape, SolidWorks), MatLab, GCC
Tools	Logic Analyzer, Oscilloscope, In-Circuit Debugger/Programmer (JTAG), Electronic Load
Relevant Classes	Digital Signal Processing, Control Systems, Advanced Power Electronics (Graduate Level)

Work Experience

PercFab **June 2023 — Sept. 2023**

Phone Installation Technician *Tuscon, Arizona*

- Gathered call-flow requirements from customers and implemented them with VoIP systems

METER Group Inc **June 2022 — Sept. 2022**

Firmware Engineering Intern *Pullman, Washington*

- Created a hardware-in-the-loop (HIL) continuous integration (CI) system for the AquaLab3 product
- Produced an integration test suite that exercises serial connectivity, command line interface, firmware update, and humidity/temperature sensors
- Refactored the AquaLab3 command spreadsheet, reporting 8 firmware bugs and applying git-styled documentation for future parsability
- Developed a Python v2.7+ serial device library that handles handshaking processes with METER Group Devices

Unimeasure Inc **July 2021 — Sept. 2021**

Electro-Mechanical Intern *Corvallis, Oregon*

Relevant Projects

Drawing SCARA Robotic Arm **Spring 2023**

- Implemented a PID motor controller, timer-based encoder driver, and a PWM motor driver
- Wrote a publish-subscribe interrupt abstraction module allowing driver code to follow separation of concerns
- Designed the arm with off-the-shelf components using CAD (OnShape) and produced dimensioned drawings

Low-Noise Low-Visibility Drone **September 2024 — Current**

- Designed two buck converters based on TI's LM614 IC that convert the 6S LiPo drone battery (18V to 25.2V) to 5V and 3.3V, respectively
- Programmed a python script that captures/loads an audio signal and analyzes its relative power spectral density

Range of Motion Device **August 2018 — Current**

- Wrote a typescript electron app with a 3D interface that displays sensors' orientations and calculates a continuous, multi-revolution axis-angle representation of the sensors' relative rotation.
- Developed a hardware abstraction layer for STM32L4 (Arm Cortex M4) C which outperforms vendor's

AVR Assembly Rock-Paper-Scissors Game **December 2023**

- Architected a finite state machine with synchronized state transitions via UART
- Self-taught preprocessor macros to follow "no magic numbers" and "DRY" principles at no performance cost

Humidity-Regulated Mycelium Fruiting Chamber **July 2020 — Sept. 2020**

- Implemented bang-bang control system with humidity sensors and an ultrasonic humidifier
- Designed and 3D printed a humidifier reservoir with a float switch and solenoid valve to maintain the water level.