

Education

University of Washington, School of Engineering, Seattle, WA

Sep 2018 – Jun 2023

Bachelor of Science in Electrical Engineering

In-Major GPA: 3.93

Cumulative GPA: 3.85

Dean's List: All quarters - 2018, 2019, 2020, 2021, 2022

Experience

Embedded Systems Capstone: Smart Dog Collar – University of Washington

Sep 2022 – Dec 2022

Embedded Systems Engineer

- Developed a smart collar that monitors the animal's temperature and notifies the owner if it reaches dangerous levels
- Created an Android application which communicates to the device via Bluetooth Low Energy and has a Firebase backend
- Designed a custom PCB for the internals of the device using KiCad

ENGINE Capstone: Octopus VR Experience Team – University of Washington

Dec 2021 – Jun 2022

Game Developer

- The project sought to create a VR experience where users control a realistic octopus model
- Created an AI model to enable the octopus tentacles to independently reach in and explore the interior of an object
- Implemented several core game features and scripts like scene/audio managers, level design and NPC interaction

Self-Employed – Seattle, Washington

Sep 2020 – Dec 2021

Mathematics Tutor

- Tutored upper-level high school math courses for multiple students
- Enabled students to achieve their highest grade in math thus far as well as fostered a love for the subject
- Improved technical communication as well as metacognitive skills

Technical Skills

Experienced Programmer (Java, C, C#, Python, Kotlin, FreeRTOS, Git, Bash, Linux, SQL, Azure)

- Designed a rubber band cannon that automatically aims on the vertical axis using Arduino and FreeRTOS
- Developed a visual .MIF file generator with python to aid in creating images on an FPGA display
- Created a function graphing tool in java using the drawing panel module

Skilled Circuit Designer (SystemVerilog, Breadboarding, ASIC, Cadence, FPGA, Soldering, MultiSim, KiCad)

- Developed a 64-bit pipelined ARM CPU using explicit logic
- Created a multi-level maze game on an FPGA board
- Designed custom flex PCB using KiCad

Creative Software and CAD Modeling (Unity, AutoCAD, Adobe Suite)

- Worked in a team using Unity to create an octopus VR experience
- Experience in modeling from using AutoCad from course material
- Proficient in Photoshop, Premiere Pro, Illustrator, and After Effects from personal as well as academic projects

Relevant Courses

Data Structures and Algorithms; VSLI II; Advanced Technical Communication; Intermediate Programming; *Web Development (Spring 2023)*; Introduction to Database Systems; Computer Architecture I; Continuous Time Linear Systems; Computer Programming Series; Digital Circuits and Systems Series; Devices and Circuits; Introduction to Embedded Systems; Circuit Theory Series.

Personal Links

Personal Website: <https://robertcrist.github.io/>

Embedded Systems Capstone: <https://embeddedcapstone22.wordpress.com/>

GitHub: <https://github.com/RobertCrist>

Octopus Research Group: <http://arl.cs.washington.edu/ORG/>