Alex Butler

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WORKING EXPERIENCE

IBM Z
Millicode Hardware Developer Intern MAY 2022 – AUG 2023

- Participated in IBM Extreme Blue, designed and implemented system to save $635,000 each year
- Programmed data collection system to centralize defects from multiple databases for later AI enhancement to machine bring up and test
- Developed internal CI/CD system using Kubernetes, OpenShift, & Tekton
- Refactored and maintained tools for efficiency and best practices
- Developed internal dashboard for field deployed system data
- Assisted code base migration to new version control system

Watts Water Technologies
Research & Technologies Co-Op JAN 2021 – AUG 2021

- Programmed embedded RF firmware, application-level, and cloud-interfacing systems,
- Advised field deployment of embedded devices.
- Created power budget for deploy-able devices.
- Working Experience debugging and revising PCBs in Kicad.

Olin College Aquaculture Profiler (OCAP)
Research Assistant SUMMER 2020, SPRING 2021

- Spearheaded research and design of dissolved oxygen sensing experiments.
- Designed, prototyped, and programmed hardware system for sensing & data-logging dissolved oxygen

EDUCATION

DEC 2023 **Olin College of Engineering**
GPA 3.57 Bachelor of Science
Electrical and Computer Engineering

SKILLS

Programming	Python, C, Rust, LaTeX MATLAB, Arduino C
Tools & OS's	Linux, Vim, Nix
Electrical Design & Modeling	PLECS, LtSpice, Xschem, MAGIC VLSI, Kicad, Logisim, Verilog,

AWARDS

2019 **Olin 50% Tuition Merit Scholarship**
Olin College of Engineering

2019 **Hispanic Scholarship Fund Scholar**
Hispanic Scholarship Fund

2018 **University of Alaska Scholar**
University of Alaska

PROJECTS

Swarm: a Projection Mapping Toolkit
Entrepreneurship Engineering Capstone Project SEPT 2022 – MAY 2023

- Created a desktop application in Python enabling users to quickly use projection mapping tools with existing media.
- Created to enable mass adoption for users with limited to no hardware.
- Extensive user interviews to validate design choices, product features, & UI.
- Implemented technical components of project including computer vision, machine learning, and structured light.

Unlicensed Access + Microwave Fixed Links @ 6 GHz Coexistence Research
Analog & Digital Communications, NSF, SpectrumX Research Project SEPT 2022 – DEC 2022

- Researched unlicensed spectrum usage and coexistence issues with incumbent services in the 6 GHz band
- Interviewed relevant issue stakeholders to validate research assumptions

20W DC to DC Power Converter
Power Electronics Lab Project SEPT 2021 – DEC 2021

- Assembled a DC to DC power converter capable of running as a buck and fly-back (buck-boost) converter
- Computed bench-top analysis across power converter for component selection of the student designed portion of the board
- Manufactured components to calculated & simulated specifications, including magnetics & control schema

DISKOS: a Kinetic Battery
Principles of Integrated Engineering Final Project OCT 2021 – DEC 2021

- Led exploratory project into kinetic battery technology
- Designed a 400W 20V BLDC motor controller to move energy between our flywheel and system
- Developed and integrated mechanical, electrical, and programming elements successfully

Conway's Game of Life (CGOL) Hardware Implementation
Computer Architecture Final Project NOV 2020 – DEC 2020

- Developed python simulation, digital logic (Logisim) & Verilog, and FPGA implementation of CGOL.
- Pursued exploratory deep-dive into hardware-level cellular automata sucessfully