

Aidan Goettsch

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EXPERIENCE

BlueHalo - Robotics Intern - Rockville, MD May 2022 - July 2022

- Developed software in C++ and Python which integrated radio communication with ROS.
- Made improvements to a custom radio protocol running on National Instruments Software Defined Radio hardware to improve latency and add additional capabilities.
- Interfaced with custom FPGA hardware through interfaces designed in VHDL and Verilog.
- Used ROS to build an idiomatic wrapper for the protocol using services and actions.
- Worked hands on with RF test setup and learned about important radio communication topics.

Cooler Screens Inc. - Software Engineering Intern - Remote June 2021 - August 2021

- Worked as a part of the edge software team under the Agile process, writing software for over 5000 IoT media devices using NVIDIA Jetson embedded platform and React.
- Developed software for media screens in pharmacy areas of stores, allowing expansion to a new market segment.
- Benchmarked GPU performance of different builds of Chromium and Electron using custom tooling.
- Optimized Docker images and build process, reduced bandwidth for software updates by ~90% and improved build times.

Efabless Corporation - Intern - Remote June 2020 - August 2020

- Developed an open source tool to generate schematics from circuit netlist representations.
- Designed and programmed an algorithm to layout components and wires for legibility in generated schematics.
- Wrote Verilog HDL descriptions and used RTL tooling to produce test circuits.
- Created Python library to read and write file formats used by EDA software.
- Presented algorithm and tools at 2020 Workshop on Open-source EDA Technology.

MISI DreamPort - Intern - Columbia, MD June 2019 - July 2019

EDUCATION

University of Michigan - Ann Arbor, MI August 2021 - April 2024

B.S.E. Computer Engineering - 3.96 GPA

- Relevant coursework: EECS 280 Introduction to Programming and Data Structures, ENGR 100 Introduction to Engineering, MATH 215 Calculus III, MATH 216 Differential Equations.
- In progress: EECS 215 Introduction to Electronic Circuits, EECS 281 Algorithms and Data Structures, EECS 270 Introduction to Logic Design.
- Firmware development in C++ for MASA rocket team, worked on transitioning build to CMake.

Poolesville High School - Poolesville, MD 2017 - 2021

Science, Math, and Computer Science Magnet Program

EXTRACURRICULARS

Cybersecurity Competitions and Research

- As captain of HS computer team, taught lessons and organized school involvement in competitions.
- Participant in and organizer of cybersecurity capture the flag challenges where competitors exploit simulated services.
- Awarded bug bounties through HackerOne for finding vulnerabilities in Discord as a part of developing a video playback bot, which involved reverse engineering Discord's protocol.

SKILLS

- Programming in Python, JavaScript, C, C++, CUDA, Java, Kotlin, Rust, and Matlab.
 - Databases including SQLite, MySQL, MongoDB, other NoSQL.
 - Web development using Node.js, React, Webpack, Express, and TypeScript.
 - Video processing and streaming using FFMPEG and Open Broadcaster Software.
 - Experience developing software for Linux systems and working with the command line.
- Design for FPGAs using Verilog and Intel Quartus toolchain.
- DevOps tools including Git, Docker, Docker Compose, BuildKit, GitHub Actions, Azure DevOps.
- Experience with CAD and EDA software including Fusion 360, OnShape, Autodesk Inventor, KiCad.
- Developing for embedded systems including NVIDIA Jetson, Arduino, Raspberry Pi.