David Allen

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Objective

Seeking a Software Engineering co-op that requires strong skills in C, C++, Rust, Java, and Python Rust in both general and embedded systems.

Education

Rochester Institute of Technology (RIT), Rochester, NY — Expected May 2024
Bachelor of Science, Software Engineering — **GPA: 3.76**
Related courses: Personal SE (C programming), Engineering of Software Subsystems, CS 1 and 2 (Python and Java)

Skills

Programming Languages: C++, Rust, Java, Python, C, GPU Shading Languages, Javascript, HTML
Embedded Systems: Hardware Abstraction Layers (HALs) for i.MX RT106x and STM32L4xx MCUs, interfacing with sensors using I^2C and SPI, basic circuit design

Projects

Amateur Liquid Fueled Rocket Engine, Personal Project — January 2020 - Present

- Building a custom CNC mill from a Grizzly G0781, controlled using a Teensy 4.1 microcontroller
- Utilized CAD, CAM, ECAD, and analysis software such as Fusion 360, Autodesk Inventor, and KiCAD to design systems
- Learned to operate equipment such as stick & TIG welders, 3D printers, a mini-milling machine and mini-lathe, and how to assemble circuit boards

Robotics Competition, Academic Project — January 2019 - May 2019

- Collaborated with a team of 4 to build a drone to complete tasks in a simulated sea environment
- Developed control software for the drone in C++ with a Raspberry Pi
- Analyzed bugs and faults in the complicated related systems for the drone

Home-brew Video Game Engine, Personal Project

- Designed and built from the ground up in C++
- Custom rendering abstraction with Vulkan and D3D12 backends using render graphs and low level rendering techniques (with an OpenGL 4.x prototype backend)

Other past Projects: Partially working breadboard processor based on the 6502 arch, shell taping machine for fireworks (see my website for more details)

Work Experience

Course Assistant for Software Construction (RIT SWEN-609) — August - December 2020

- Review and grade assignments while providing constructive feedback
- Communicate effectively with students about problems with coursework and help them reach a solution
- Balance a full academic course load with >=8 hours per week of work

Field Assistant at Elizabeth M. Allen Land Surveying — June 2017 - August 2020

- Operate high precision optical equipment and record geometric field data
- Communicate effectively with clients to ensure quality boundary surveys
- Develop routines and procedures to ensure high quality and complete field data for CAD, drawings, and maps

Working Assistant at Swanson's Fabrication (Bradford, PA) — June 2016 - August 2016

- Operate power tools and fabricate aluminum railings for a customer
- Be aware of safety protocols around heavy machinery (lathes, mills, forklifts, welding equipment, etc.)
- Sustain a clean and safe environment for all workers