Logan Manthey

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Education

Bachelors of Science, Computer Engineering, Minor, German **May 2025**
Rose-Hulman Institute of Technology, Terre Haute IN

Related Courses
Embedded Systems, Digital Signal Processing, Continuous-Time Signals & Systems, Computer Architecture I-II, Operating Systems, Electronic Device Modeling, Practical Security I-III, Cyber Security Seminar, Introduction to Digital Systems, German I-VI, DC and AC Circuits, Circuits and Systems, Object-Oriented Software Development, Engineering at Nanoscale

Relevant Work Experience

Glassboard Product Development Indianapolis, IN June 2022 - Present
Embedded Hardware Engineering Intern
Worked on a team to develop new products from customer specifications; Designed Altium Schematics and layouts, prototyped and tested PCB assemblies, surface mount soldering, firmware development, wrote technical documentation, implemented and ran electronic component database for on-hand parts

Curt G. Joa Sheboygan Falls, WI June 2021 - August 2021
Electrical Engineering Intern
Communicated across various teams including electricians, mechanical engineers, and mechanics to develop industrial automation machinery in the disposable hygiene space; worked with Allen Bradley PLC, Studio 5000 Logix, Logix Emulate, RSlinx, Factory Talk, Codesys, Cognex Machine Vision Insight explorer, and VMware ESXI for remote HMI systems; troubleshooted electrical panels, setup and tested new devices, and coordinated with project management and customers

Projects and Research

Portfolio Website:
Research Experience

- **Evolvable Hardware:** Worked on a team to develop and run experiments using bit-stream evolution to evolve circuits on an ICE40 FPGA. Used KiCAD to design and develop an ICE40 FPGA and Microcontroller Carrier Board to collect data
- **Genetic Algorithm Simulation:** Worked with a team to create a Java program to simulate genetic evolution

Engineering Projects

- **Reduced Instruction Set Processor:** Utilized Model-Sim and Quartus Prime to design and implement both a custom multi-accumulator and load store reduced instruction set processor in Verilog with supporting documentation in LaTeX.
- **RISC-V ROP Gadget Finder** Worked in a team to create python scripts to find gadgets from RISC-V binaries
- **Camera Controlled Car:** Programmed an MSP432 in C to control a car with movement recognized by a camera
- **Sensor Terminal:** Relayed values from an I2C gyroscope to a parallel LCD screen with settings adjustment from a UART terminal
- **Piezo Buzzer Music Driver:** Used timers and interrupts to generate a PWM signal for a piezo buzzer; playback was controlled using hardware interrupts on buttons
- **Stepper Motor Driver:** Built a Stepper motor driver that also generated a PWM signal using timers to control a servo motor speed gauge
- **Solar Cell:** Created and tested a solar cell in a clean room. RCA clean, Doping, Photo-lithography, Sputtering
- **Personal Networking and Home Automation:** Managed a network rack with Network Attached Storage Servers, Hyper-Visor servers, managed switches, and routers; ran Home Assistant virtual machine that uses Zigbee, and ESP32 modules

Formula SAE Electrical Team
Electrical Team Member from 2020-2021

- Worked on a team to design and implement an embedded steering wheel control system using an STM32 microcontroller and Altium designer

Activities and Honors

Dean's List Rose-Hulman Institute of Technology 2020 - 2021
Cyber Security Club Vice President, Treasurer Rose-Hulman Institute of Technology 2021 - Present
Jazz Pianist, Acapella Accompanist Rose-Hulman and Plymouth School District 2017 - Present
FIRST Robotics Programming Team Captain 2016-2020
German Student Exchange Program Lived with a host family in Germany and traveled the country Summer of 2019
FIRST Robotics Team Captain RoboRiot 3418 Programming Team Captain for 3 years 2017 - 2020