Mitchell Conrad

484-502-9014 mconrad4@ycp.edu mconrad.tech

Education

York College of Pennsylvania Expected Aug 2024

Bachelor of Science in Computer Engineering 4.0 GPA

Experience

Controls Engineering Intern, Multi-Dimensional Integration – Shrewsbury, PA Aug 2023 – Present

- Designed a FactoryTalk HMI, developed ladder logic code for multiple AB PLCs, and integrated message-based communications between AB and Siemens PLCs, which enabled manufacturing multiple goods on the same line

Controls Engineering Intern, Multi-Dimensional Integration – Shrewsbury, PA Jan 2023 – May 2023

- Reverse-engineered an outdated and disorganized control system, led the system's redesign and replacement, and completed the project under budget, earning a 50% profit while ensuring customer satisfaction
- Designed an electrical system and programmed a PLC-5 to control a DC drive using an Ethernet to RIO gateway, which restored the functionality of the production line and stopped the customer from losing money
- Developed leadership, communication, and management skills by leading technicians during multiple project installations and corresponding with customers

R&D Software Engineering Intern, Becton Dickinson – Sparks, MD May 2022 – Aug 2022

- Reproduced and analyzed bugs using logs, developed fixes, created testing procedures, and improved system reliability on the COR project, an automated molecular diagnostic instrument
- Developed the front-end in Angular and the back-end in C# for an internal feature allowing instruments to accept expired consumables, which reduced plastic waste and increased productivity in R&D and Operations

Projects

Optical Wireless Communications (OWC), Capstone Design I May 2023 – Aug 2023

- Led the design and implementation of software and hardware improvements to a directional infrared-based OWC system, enabling robots to locate other mobile nodes and facilitate reliable data transmission autonomously
- Developed a Python-based multithreaded pipeline that uses OpenCV to merge many video streams into a panoramic feed, sending the resulting stream to a custom object detection model for real-time object recognition, and achieving exceptional frame rates within an embedded environment

PaperTrader, Software Engineering and Design Jan 2022 – May 2022

- Collaborated with a team to develop a simulated stock trading web app using React, Firebase, CSS, and Git which allows users to practice investing in real markets without the risk

MIDI Synthesizer, YCP Hacks Nov 2021

- Exploited the vibrations made by stepper motors to produce audio by using an Arduino to process a live MIDI signal and control motor speeds correlating to different pitches, winning the Best Hardware Hack Award

Skills

Programming: C, C++, C#, Java, Python, HTML, CSS, JavaScript, React, Studio 5000, SQL, MIPS, Verilog

Software: Ignition HMI, FactoryTalk, TINA, KiCad, Azure DevOps, SolidWorks

Technical Skills: OpenCV, MVC Architecture, Agile Development, Circuit Design & Analysis, 3D Printing

Activities and Awards

IEEE Student Branch Secretary Apr 2023 – Present

- Established effective communication between the executive board and student branch members

Computer Science Tutor Feb 2022 – Present

- Supported students with their Java and C assignments by teaching them data structures and debugging strategies

Engineering Society of York Award Apr 2022

- Recognized for outstanding academic performance in the Electrical and Computer Engineering program