Matthew Felsen

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Skills

C, C++, C#, Arduino, Python, MATLAB, VHDL, XAML, JavaScript, Haskell, Data Structures, Serial Communication

Experience

Garmin International

Software Engineer Intern — September 2019 – Present

- Implement bug fixes and new features for portable navigation devices using C and C++

John Deere

System Performance Engineering Intern — May 2019 – August 2019

- Validated and verified on-board and off-board end-to-end solutions
- Conducted test cases on software at system level to satisfy performance standards
- Designed and developed a hardware-based test tool to verify software features on harvesting platforms
- Automated master data set and targeted key metrics for quarterly reporting using Python

Product Engineering Intern — May 2018 – August 2018

- Analyzed and designed Hardware in the Loop software test system architecture for next generation controllers
- Wrote and improved scripts for Agile tools to streamline workflow
- Acquired skills in CAN protocol and Model Based Software Development

Kiewit

Electrical Design Intern — August 2015 – December 2015

- Responsible for creating and editing schematics across 2 different contracts

Projects

LED Pace Trainer

- Won **top 10 best hack** at PickHacks Hackathon
- LED strip designed to run at a certain speed to pace for timing-based sports like Swimming and Track
- Single board computer and microcontroller set up in a master slave configuration and communicate via UART
- GUI designed for Windows 10 IoT Core OS
- GUI and Microcontroller written in C# and C++

Window Weather Vent

- Window insert that automatically controls air flow from atmosphere to room based on temperature and humidity data
- **Provisional patent** filed to demonstrate proof of concept
- Lead Electrical Engineer who oversaw 4 members on electrical team

Biometric Security Camera

- MicroPython based security camera that implements Machine Vision to identify and track faces and objects
- Microcontroller transmits PWM signal to servo motor based on an algorithm to keep faces in the middle of camera's FOV.

Education

University of Kansas

- B.S. Computer Engineering — January 2018 - May 2021

3.52/4.00

Missouri University of Science and Technology

- Pi Kappa Alpha Fraternity — August 2016 - December 2017

Activities

Missouri S&T Swim Club **President & Founder** — November 2016 – December 2017

- Founded and led organization of 60 recruited members
- Responsible for $6,000+ annual budget and assets