MATTHEW FELSEN

913-375-4726 | mefelsen@ku.edu | mefelsen.github.io | linkedin.com/in/matthew-felsen | github.com/mefelsen

EXPERIENCE

Software Engineer Intern
Garmin International

September 2019 – May 2020 | Lawrence, KS

- Implement bug fixes and new features on Linux based portable navigation devices using C, C++, and GDB
- Designed a feature to support dynamic power supply for PND's by utilizing PMIC chip features
- Led initial research for software-based solutions for USB-C support on portable navigation devices

System Performance Engineering Intern
John Deere

May 2019 – August 2019 | Urbandale, IA

- 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
John Deere

May 2018 – August 2018 | Ankeny, IA

- 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

Electrical Design Intern
Kiewit

August 2015 – December 2015 | Lenexa, KS

- Responsible for creating and editing schematics across 2 different contracts

PROJECTS

LED Pace Trainer

- 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
- Mobile app written in JavaScript using Cordova - IoT app written in C# using Windows 10 IoT Core

Window Weather Vent

- Window insert that automatically controls air flow from atmosphere to room based on temperature and humidity data

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 object-centered algorithm for camera FOV

ACHIEVEMENTS

Top 10 Best Hack
for LED Pace Trainer at Pick-Hacks 2019

Provisional Patent
for Window Weather Vent

STRENGTHS

Arduino | C/C++ | C# | JavaScript | Python | HTML | VHDL | XML | Data Structures & Algorithms | MATLAB | Serial Communication

EDUCATION

B.S. Computer Engineering
University of Kansas

January 2018 – May 2021

GPA: 3.52/4.00

B.S. Electrical Engineering
Missouri University of Science and Technology

August 2016 – December 2017

ACTIVITIES

President & Founder
Missouri S&T Swim Club

November 2016 – December 2017

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

Member
Institute of Electrical and Electronic Engineers

December 2016 - May 2021

Engineering Representative
CAPS Innovation Celebration

- Presented Laser Harp Project to companies like Google, AT&T, and Burns & McDonnell to raise funds for engineering program
- The Lajer Harp Project was a MIDI instrument designed for musicians with motor impairments