Cole Kniffen

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PROFESSIONAL EXPERIENCE

Firefly Aerospace   Cedar Park, TX
Electrical Engineer   January 2024 – Present

- Orchestrated the development of harnessing for a small-lift vehicle's next generation of avionics hardware by leading environmental qualification campaigns, creating new design standards, owning all system level schematics, and driving avionics architecture decisions.
- Implemented LVDTs, thermocouples, RTDs, pressure transducers, serial devices, and 4-20mA sensors on a launch vehicle and spacecraft to enable successful missions.
- Built an RTL testbench in SystemVerilog by designing custom modules to represent physical hardware and various test cases, enabling automatic verification of new FPGA logic and more efficient development.
- Coordinated with an interdisciplinary team of engineers to specify expected environments for a lunar lander mission to ensure harness designs met thermal, vibration, and radiation environmental requirements.
- Programmed 6 different tools in Python which utilized existing data in Siemen's Capital to automate portions of harness design and manufacturing, leading to improved efficiency.

Codex Laboratories LLC   West Lafayette, IN
Navigation and Controls Engineer / Founder   December 2020 – August 2021

- Built computer vision and controls algorithms using ROS and C++ to enable a drone's swift exploration and mapping of GPS-denied environments; placed 4th out of 1,000s of companies in a DOD contract competition.
- Created a cloud-based web-app using ReactJS, Ruby, Docker, and AWS to provide stakeholders with a robust, low-cost, and high-fidelity drone simulator that simplified autonomous robotics development.
- Developed a mobile app using Flutter and designed a circuit (PCB) with numerous sensors to provide an off-road vehicle company with driver training data and to reduce vehicle maintenance downtime by 10%.
- Collaborated with the CEO and CFO to formulate a comprehensive business plan, securing funding from a group of key stakeholders.

Consumers Energy   Jackson, MI
Electrical Engineering Intern   May 2020 – August 2020

- Identified and corrected 10,000+ errors in a database with 1,000,000+ entries using SQL and statistical analysis to increase data accuracy, inform grid infrastructure design, and correct billing errors.
- Deployed a Python program to archive weather forecasts of 1,093 substations daily, improving outage prediction and decreasing annual costs by ~$100,000.
- Analyzed secondary transformer failures using SQL and Python to identify failure causes and create a predictive model to reduce the frequency of outages caused by device failures.

EDUCATION

Purdue University   West Lafayette, IN
Bachelor of Science in Electrical Engineering   August 2019 – May 2023
GPA: 3.93/4.00

SKILLS

Programming Languages: C, C++, Python, Verilog, SystemVerilog
Technical Knowledge: PCB Design, Embedded System Design, Digital Signal Processing, Sensors/Instrumentation
Software: Altium, NX, Libero, ModelSim, Siemens Capital
Certifications: IPC/WHMA-A-620 (Certified IPC Specialist)