David Perez

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Portfolio: www.davidjonperez.com

RELEVANT WORK EXPERIENCE

Communication System Solutions | Lincoln, NE — May 2022 to Present
Software Design Engineer Intern

- Collaborated with the engineering and manufacturing teams for programming of final stage PCB manufacturing provisioning process using a Raspberry Pi C++ QT application used by 3 manufacturing plants. Additionally provided programming development for embedded firmware for LED, serial, FSK and LoRa radio communications between STM32 and Raspberry Pi microcontrollers.
- Replicated and abstracted the provisioning process for additional independent PCB manufacturing and firmware design contract.
- Programming development on Yocto Linux embedded system for maintaining backup configuration files.
- Implementing subsystem hardware abstraction layers and unit tests using C/C++ for peripherals such as battery ADC on stm32 microcontroller for several hundred thousand unit runs.
- Created Python scripts for command line interfaces for the hardware manufacturing team to test and program several thousand embedded devices.
- Electrical engineering signal analysis and configuration for testing hardware peripherals such as radio, temperature sensors, accelerometers, ADCs, and USART using oscilloscopes, joule scopes, and multimeters.

EDUCATION

University of Nebraska–Lincoln | Lincoln, NE — Graduation: May 2024
Bachelor of Science in Electrical Engineering, Bachelor of Science in Computer Engineering

Relevant Coursework: Fundamentals of Computer Vision, Intro to Deep Learning, Linear Control Systems, Software Engineering Robotics, Mobile Robotics I, Numerical Analysis, Digital Signal Processing, Electronics and Circuits I, II, III.

SOFTWARE ENGINEERING SKILLS

- Firmware peripheral development on embedded devices.
- Application development for Graphical User Interfaces and backend development with Azure SQL databases, serial interfaces, printers, and scanners.
- Developing neural networks for logistic and computer vision applications.
- Industry software development best practices using Git.
- Developing Python scripts for embedded system programming and metadata generation.
- Software unit testing techniques including on embedded devices.
- Web Development using HTML, CSS, and JavaScript.
- Development and maintenance of large-scale software systems.

ELECTRICAL ENGINEERING SKILLS

- Hardware testing and design using oscilloscopes, logic analyzers, and multimeters.
- Signal processing using Fourier transform.
- Circuit analysis techniques for the design of circuit voltage and current usage.
- PCB design using RP2040 MCU and motor controllers.
- Circuit design using VHDL hardware description languages.