Ryan Donahue

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Experienced developing electronic circuitry from concept to assembly. My skills and interests lie in the design, test and verification of hardware and embedded software with an emphasis on reliability and manufacturability. I am eager to start a career where I can apply my **areas of expertise:**

- Design of power converters and analog filters.
- Embedded firmware and device drivers in C.
- Mathcad and MATLAB for calculations and analysis.
- Python for data analysis and workflow automation.
- PCB design for signal and power integrity
- Protocols RS-232, I^2C, SPI, CAN and USB.
- Amazon FreeRTOS.
- FPGA programming in VHDL.

Professional Experience

Schweitzer Engineering Laboratories | Pullman, WA 03/2018-Present
Hardware Engineering Intern

- Explored signal integrity and termination schemes for PCIe differential traces. Simulated effects of reflections using Hyperlynx. Verified results with VNA and oscilloscope measurements on a design of experiment board.
- Diagnosed SEL-9331 power supply failure. Determined that manufacturing processes increased bulk capacitor temperature rise resulting in electrolytic leakage.
- Tested thermal and EMC requirements to verify IEC 60255-27 compliance for SEL-2440.
- Selected current limiting resistors for SEL-RTAC LEDs. Performed tolerance analysis in Mathcad.
- Qualified Samsung SD cards for use in products. Automated tests to determine maximum erase cycles and data retention during environmental conditioning.
- Qualified 2 replacement MLCCs. Compared datasheets and measured frequency responses.

University of Idaho Mechanical Engineering Department | Moscow, ID 08/2018-Present
Data Acquisition Device Designer

- Designed, built and tested 100 data acquisition devices used for agricultural research. Increased reliability and reduced cost by 70% by pursuing small-batch assembly.
- Created KiCad PCB with PIC32 MCU, ADC, GPS, accelerometer, USB and touchscreen display.
- Implemented FreeRTOS for reliable event scheduling and resource management.
- Presented designs to peers and industry panels. Created a user manual for clients and stakeholders.

Web-based CAN Bus Sniffer | Moscow, ID 10/2018-12/2018

- Programmed PIC32 MCU to monitor and transmit CAN bus frames to remote locations via Ethernet and UDP.
- Created modular Ethernet, CAN,and LCD FreeRTOS drivers.
- Generated documentation with Doxygen and LaTeX.

Associations

Student Member, IEEE | Moscow, ID 09/2017-Present
Programs Chair, Associated Students of University of Idaho | Moscow, ID 08/2016-05/2017
Eagle Scout, Boy Scouts of America | Eagle, ID 09/2008-01/2015

Education

University of Idaho | Moscow, ID Expected 05/2019
Bachelor of Science in Electrical Engineering | GPA: 3.88