Courtney Howell

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Engineering Experience

SSD HARDWARE INTERN, MICRON – LONGMONT, CO   (Summer 2018)
- Characterized and evaluated voltage regulators for backup power management including investigation into alternate ICs, different capacitor type and capacity, and operation under higher power demands.
- Standardized voltage regulator testing procedures and presentation of results in a concise manner for evaluation by creating Excel spreadsheet for test result data with automatic pass/fail indicators.
- Designed in Cadence a new revision of a SSD adapter board to include multiple reworks for different power supply voltage, voltage regulator output stability, and replacement of EOL capacitors.

ELECTRICAL ENGINEERING INTERNSHIP, SPECTRA LOGIC - GUNBARREL, CO   (Summer 2017)
- Designed and executed tests to determine optimum operational parameters of an optical sensor for use in a tape storage library and analyzed resulting data using Matlab.
- Modeled current, speed, and position control of a BLDC motor in Simulink, once using a combination of circuit elements and signal blocks and a second time using only signal blocks.
- Programmed an Arduino to control a MOSFET-based reset circuit on a variable time delay and check over the serial terminal for corruption of another system.
- Tested and characterized heat dissipation and energy use in a high-power power supply.

HAM RADIO RECEIVER PROJECT   (2018)
- Designed a HAM radio receiver for operation in the HF band, including circuit design of all filters and oscillators and selection of ICs for mixer and amplifier stages.
- Created receiver schematic and did PCB layout in Altium with a 4-layer design.
- Assembled and tested receiver PCB including matching IF crystal resonance frequencies and winding custom inductors.

ELECTRONICS DESIGN LAB PROJECT   (2017)
- Built a "budget Roomba" that mapped a quadrilateral-shaped room, using a combination of analog feedback loops and an Arduino for speed control and line-finding.

Skills
- Experienced in C programming with applications to real-time embedded systems.
- Experienced in Verilog programming and use of Quartus II and Modelsim.
- Experienced in using Simulink to model circuits and systems.
- Practiced in the use of LTSpice and Multisim to design and simulate circuits.
- Practiced in the use of Altium and Cadence for schematic capture and PCB layout.
- Trained in the use of benchtop equipment such as oscilloscopes, multimeters, power supplies, function generators, and network analyzers.
- Adept at microsoldering, surface-mount soldering, crimping, and the use of wire wrap.
- Adept at technical writing for academia and experimental reports.
- Familiar with Matlab and Wolfram Mathematica.
- Familiar with HTML and CSS programming for website design.

Education

UNIVERSITY OF COLORADO BOULDER – BOULDER, CO – August 2015 - Present
Currently pursuing BS/MS in Electrical Engineering, 3.981 GPA, Dean's List 2015, 2016, and 2017
Relevant Coursework
Intro to Digital and Analog Electronics, Intro to Circuits and Electronics, Digital Logic, Applications of Embedded Systems, Circuits as Systems, Electronics Design Lab, Programming Digital Systems, Electronics for Wireless Systems, Microelectronic Circuits, Linear Systems, Electromagnetic Fields/Waves, Digital Design Lab, Introduction to MEMS, Bioelectromagnetics, Design of Implantable Devices, PCB Design and Fabrication, Intro to Power Electronics, Analog IC Design, Control Systems Analysis

Awards and Honors

Girl Scout Gold Award - 2015