Courtney Howell

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Engineering Experience

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.

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

FPGA DESIGN PROJECTS (2016)

- Designed and implemented using Verilog on the Altera DE0 FPGA a 2n-bit comparator with ability to compare positive and negative numbers in 2's complement.
- Designed and implemented using Verilog on the Altera DE0 FPGA a number guessing game.

CIRCUIT DESIGN PROJECT (2015)

- Designed and built a digital 12-hour clock with AM/PM indicator and alarm using logic gates and counters.
- Designed and tested circuitry using Multisim before implementation.
- Built custom 5-Volt AC/DC power supply to power clock from the wall.

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 for PCB layout
- Trained in the use of benchtop equipment such as oscilloscopes, multimeters, power supplies, and function generators.
- Adept at soldering, surface-mount soldering, crimping, and the use of wire wrap.
- Familiar with Matlab and Wolfram Mathematica.

Education

UNIVERSITY OF COLORADO BOULDER – BOULDER, CO – August 2015 - Present
Currently pursuing BS in Electrical Engineering, 3.979 GPA, Dean's List 2015 and 2016
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, Optoelectric System Design, PCB Design and Fabrication

SILVER CREEK HIGH SCHOOL – LONGMONT, CO – May 2015
Graduated with 4.419 GPA, valedictorian, academic top ten

Awards and Honors

Girl Scout Gold Award - 2015