

# Colton Crivelli

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## Education

**California Polytechnic State University, San Luis Obispo**

Major: Electrical Engineering

Year: Senior (Graduating June 2015)

## Coursework

- Digital Electronics & Integrated Circuits
- Computer Design & Assembly Language
- Electronics Manufacturing
- $\mu$ Processor Based Systems Design
- Electronic Design/Adv. Design
- Advanced Analog Circuits (current)
- Mechatronics (current)
- C++ Programming: Problem Analysis

## Professional Experience

- 6/14 – 9/14     **Hardware Engineer Intern, Throne, Google Incubated**     *San Luis Obispo*
- Designed a noninvasive pulse sensor according to employer's specifications, developing creative problem solving skills
  - Researched heart-rate monitoring technology in a group setting, to create a functioning prototype capable of collecting data such as heart rate, in BPM.
  - Created an innovative prototype in a self-motivated, help-yourself setting

## Academic Projects

- In Progress     **Current Input Protection Circuit**     *Senior Project*
- Creating a current limiting protection circuit between a DC-DC converter and an inverter
- In Progress     **Continuous-Time Delta-Sigma System**     *Adv. Analog Electronics*
- Noise shaping with a 2<sup>nd</sup> order type-II feedback loop
- In Progress     **PID, Sensor Based, Motor Control System**     *Mechatronics*
- Interfaced with motor drivers using C++ classes, tasks, and ISR's using a RTOS on an ATmega1281
- 9/14-12/14     **Ultrasonic TX/RX Lux Meter**     *Electronic Design*
- Current based light detector, frequency converter, 40kHz oscillator, Ask modulator, amplification stages, and PLL tone decoder
- 4/13-5/13     **Created a function generator using an Atmega328P microcontroller**      *$\mu$ Processor Sys Design*
- Variable frequencies, duty cycles, and waveforms
- 4/13-4/13     **Interfaced an Atmega328P microcontroller with an LCD screen**      *$\mu$ Processor Sys Design*
- 3/11-5/11     **Dual Power Supply Manufacturing**     *Basic Electronics Manufacturing*

## Personal Projects

- 9/14-10/14     **Created an IR remote controlled 555 based LED dimmer**
- Explored PWM, the Arduino Nano, and 555 internals
- 8/14-9/14     **Capacitance based level sensing**
- Utilized PDM to convert change in capacitance to change in voltage
- 4/13-6/13     **6X6 LED cube**
- Minimized use of GPI/O pins using multiplexing, used an Atmega2560 to control 216 LEDs
- 1/12-3/12     **Atmega328P microcontroller**
- Created layout in Eagle, reverse-engineered a laminator to aid in layout transfer, drilled and soldered components

## Skills

- Experienced with electrical testing, data sheet reading, and measurement equipment such as multi-meters, oscilloscopes, function generators, DC power supplies, breadboards, soldering and trouble shooting
- Experienced with LTspice, C, and C++; novice in assembly, MatLab, and VHDL
- Proficient with MS Word, Excel, PowerPoint, MAC OS X, Windows, and Linux
- Well organized, experienced in technical writing, emails, and memos; strong people, team, speaking, and leadership skills; attentive to detail