Michael J. Cousins

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Profile

Mechatronics engineer with a creative mind and a love of making. Interested in the places where functional meets visual design. Looking to shape the future of how we interact with technology.

Education

Northwestern University, Evanston, IL - Graduated June 2012, Magna Cum Laude
- Bachelor of Science in Mechanical Engineering - **GPA: 3.84**
- Courses: Machine Element Design, Manufacturing Processes, Data and Algorithms, Adv. Mechatronics, Machine Perception of Audio

Technical Skills

Electronics design
- Designed and built up to four-layer PCBs in **KiCad** for both mixed SMT and thru-hole as well as **completely SMT components**, built temperature feedback solder-reflow oven for assembly
- Programmed embedded systems using **AVR MCUs**, **PIC32 MCUs**, and **TI 8051-based SoCs** in **C and C++**, built personal web projects in **HTML, CSS, and JavaScript/CoffeeScript**, familiar with **Ruby, C#, and Java**

3D design
- Engineered consumer products in **Pro/Engineer** and personal robotics projects in **SolidWorks**
- 3D printed on Objet resin printer and MakerBot ABS FDM printer for functional and looks-like testing
- Generated CNC toolpaths from SolidWorks models for artistic electronic consumer goods

Work Experience

Wiley Cousins, New Orleans, LA (wileycousins.com)

Co-founder and Hardware Engineer - October 2013 to Present
- clockblock (clockblocknola.com + github.com/wileycousins/clockblock)
  - Built complete electronics package for product, including component selection, PCB, and firmware
  - Created CAD assembly in SolidWorks for fit testing and CNC machining
- Developing electronics for next product as well as an internet-of-things project
- Teaching introduction to circuits class to bring students from no circuit knowledge to a working understanding of how to build digital logic circuits

Lightwave, New Orleans, LA - R&D (lightwave.io)

Lead Hardware Engineer - February 2013 to September 2013
- Designed and assembled SMT PCBs for the first three iterations of a wireless wearable sensor device
- Worked closely with sales and creative to define product specifications to direct R&D focus
- Researched and selected all components used in the device, including MCUs, radios, and MEMS sensors
- Generated and 3D printed CAD models of electronics enclosures for wearable testing of devices
- Directed two hardware interns to design and build devices for sensor and LED interaction tests

Newell Rubbermaid, Oak Brook, IL - Sharpie, Paper Mate, & Prismacolor R&D

Product Engineering Co-op - 48 weeks: Summer/Fall 2010, Summer 2011, Winter 2012
- Modeled complete Paper Mate product in CAD in two weeks to meet deadline for production tooling
- Created and maintained department's Pro/Engineer customizations to reduce modeling times by 30 to 50%
- Prototyped products on an Objet 3D printer for visual and functional testing