

# Kevin Kuwata

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Embedded Systems Microcontroller BareMetal Firmware

## EDUCATION

### University of Colorado: Boulder

Bachelor of Science Electrical and Computer Engineering

GPA: 3.74

May 2020

### Occidental College, Los Angeles

Bachelor of Arts in Physics, minor in Mathematics

GPA: 3.14

December 2015

## Skills

- **Software:** Altium Designer, EagleCAD, LTSpice, Solidworks, GIT, Slic3r, Photoshop, Xcode, [GitHub](https://github.com)
- **Hardware:** ePaper Display, ArmCortex M4, M0, ATmega 328p, ESP8266/ESP12F
- **Fabrication:** PCB Schematic Capture, PCB Layout and Design 2 - 4 layer, SMD/0402, 3D Printing, Laser Cutting, PCB Fabrication Toner Transfer PCB Etch (2 Layer)
- **Languages:** Embedded C, C, C++ , Data Sheets, Arduino, Swift
- **Tools:** Oscilloscope, Logic Analyzer, Hardware Debugger, DigiKey/Mouser
- **Protocols:** SPI, I2C, UART

## Project Experience

### Wifi Controlled Wall Outlet *Boulder, CO*

January 2018 — February 2018

- Designed a custom 2 layer PCB to allow the switching of mains with a 12v coil
- Developed firmware for the Espressif ESP12F micro controller to statically host a webpage and control an outlet

### Bag Tag Alarm *Boulder, CO*

March 2018 — May 2018

- Interfaced an Nordic NRF 2.4Ghz radio with ATmega328p and an 6DOF IMU (accelerometer/ gyro) to alert the user when the device had moved, used for asset anti theft
- Designed 4 layer impedance matched to 50 ohm chip antenna & compact design - 1.25" diameter

### SparkFun Qwiic Products: [Relay](#), [Keypad](#), [GPIO](#)

#### More Projects:

- YSL Window Displays
- Arm Cortex M4 Watch
- RFID Tag Reader
- Bluetooth Motor Driver (EDL)

## Work Experience

### SparkFun Electronics *Boulder, CO*

SparkX R&D Intern

September 2018 – Present

- Design firmware and hardware for the open source community
- Version controlled PCB Design in EagleCad and firmware development in C and C++

### Maxim Integrated *Colorado Springs, CO*

Digital Design and Verification Intern

May 2018 — August 2018

- Investigated RISC-V ISA for use in deeply embedded ASIC applications
- Verified GNU GCC compiler for RISC-V on a 32 bit core with behavior simulation with Cadence irun
- Created bash scripts, makefiles, linker, start up files
- Delivered an app note regarding install of RISC-V open source tools and environment set up

### SparkFun Electronics *Boulder, CO*

SparkX R&D Intern

January 2018 – May 2018

- Design and develop hardware products and integrate firmware with hardware
- Assemble and test SparkX products
- I2C products currently selling: Qwiic Relay, Qwiic GPIO, Qwiic Keypad

### PCB Research *Boulder, CO*

Research Assistant

June 2017 — July 2017

- Designed a 500 x 400 mm PCB with 3200 individually controlled Electro-Magnetic Coils
- Hardware contributed to a paper that was published in Computer Human Interaction 2018

## Leadership & Awards

### Ocean Lifeguard *Long Beach, CA*

June 2014 — August 2017

- Face of public relations for Long Beach Fire Department on the beach providing service to 100's daily
- Rescued 5 pier jumpers in 1 summer

### Best Project ECEN1400 *Boulder, CO*

Spy Ball (5+ Sensors)

March 2017

### Best Project ECEN1310 *Boulder, CO*

RFID Reader

March 2017