

# Kelvin Ly

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UNIVERSITY OF CENTRAL FLORIDA

Cummulative GPA: N/A

MS, COMPUTER ENGINEERING

2016-Spring 2018

UNIVERSITY OF CENTRAL FLORIDA

Cummulative GPA: 3.905, Magna Cum Laude

BS, ELECTRICAL ENGINEERING

2011-2015

## OBJECTIVES

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To begin and pursue a career in electronics engineering or firmware engineering

## SKILLS

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- Semiprofessional experience in electronics design (mostly **mixed signal/digital**, a little RF), **PCB layout** (KiCad, some Altium Designer)
- Hobbyist level **PCB assembly and soldering**, **SPICE circuit modeling**, and reverse engineering
- Some familiarity with **I2C**, **SPI**, **UART**, **CAN**, **SDIO**, **Ethernet**(10BASE-T), **on-off keying**, **PCM**
- Fluent in **C/C++**, **Python**, **Go**, **Verilog**, **JavaScript**
- Working knowledge of **x86/x64/MIPS/MSP430** assembly, **Java**, **LaTeX**, **MATLAB**, **Multisim**, **Xilinx ISE**, **VHDL**, **Linux**, **JTAG/SWD**

## PROFESSIONAL EXPERIENCE

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**Fluorometric Instruments** DESIGN ENGINEER, ORLANDO FL

SEPTEMBER 2017 - PRESENT

- **Designed PCBs** part time for oxygen sensors, allowing clients to test manufacturable products
- Created **designs, layouts**, sourced parts, and **assembled and tested** PCBs to create reproducible and manufacturable designs
- Developed **firmware** and **support software** for devices as needed

**University of Central Florida** UNDERGRADUATE/GRADUATE RESEARCHER, ORLANDO FL

NOVEMBER 2015 - PRESENT

- Researched defenses and attack mitigations for the **Internet of Things**, producing four publications and one book chapter
- **Designed and assembled PCBs** for the lab, producing tools and prototypes for a wide variety of projects
  - Built mixed-signal or digital designs incorporating **Texas Instruments**, **Expressif**, and **Atmel** microcontrollers
  - Currently designing a simple Doppler **2.45 GHz radar system** to provide a physical model for a labmate's project
  - Implemented and designed much of the lab's submissions to the **NYU CSAW Embedded Security Competition** '15, '16, and '17 (winning second and first respectively, no win in 2017)
- Funded by **SRC/Intel fellowship**

**University of Central Florida** UNDERGRADUATE RESEARCHER, ORLANDO FL

DECEMBER 2014 - MARCH 2015

- Studied **feature extraction** from EEG data, implementing **SSVEP frequency detection** that was later used in senior design project
- Maintained and repaired **RAVEN II** medical robot running on **ROS robotics framework**, restoring it to operation and allowing its use under a new team in current research projects

## INTERNSHIPS

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**IBM EXTREME BLUE** INTERN, RTP NC

MAY 2015 - AUGUST 2015

- Developed **on-disk encryption** for **IBM Connections**, creating a roadmap of design pitfalls for IBM's teams to work off of
- Implemented project in **JavaScript** and **Node.js**, with patches to existing **Java** and **Python** code and libraries, successfully providing encrypted context access and search indexing

**Google** SOFTWARE ENGINEER INTERN, CHAPEL HILL NC

MAY 2014 - AUGUST 2014

- Patched existing benchmarking code for Skia rendering engine, allowing collection of gigabytes of data per day into a single database
- Contributed code in **C++**, **Python** and **Go** to create actionable visualizations of benchmarking data, fulfilling Skia team's recommendations

## NOTABLE PROJECTS

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- **UCF Lunar Knights** project, Software team lead Fall 2017-Spring 2018, member since 2015 (Martian robotic mining competition)
  - **Troubleshoot and debugged** previous year competition robots, tuning and refining PID controller values to allow responsive robot movement and prevent physical damage to robot frame
  - Designed **CAN interfacing board** with **high density connectors** to mate with Nvidia's Jetson TX2, allowing native **CAN bus** access
  - Developing software for **robot simulation and testing** using **ROS** and **gazebo**, allowing parallel development of autonomy and robot assembly
  - Developing software systems for **robotic autonomous navigation** and teleoperation, allowing robot functionality for all years of competition
- Senior design project (mind-controlled wheelchair)
  - Led high-level hardware system design
  - Designed and laid out circuits for all high-level modules using **KiCAD** EDA software
  - Research into **signal processing** for **feature extraction** with respect to applications in **brain-computer interfaces**