Katy Kem

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Education

Massachusetts Institute of Technology   Cambridge, MA
Masters of Engineering in Electrical Engineering · GPA 4.6/5.0   September 2017
Bachelors of Science in Electrical Engineering · GPA 4.5/5.0   June 2016

- M. Eng. Concentration in Circuit Design, Thesis in Signal Processing
- **Relevant Coursework:** Discrete Time Signals Processing (6.341), Product Design Lab (2.009),
  Microcontrollers Lab (6.115), CMOS Analog & Mixed Signal Circuit Design (6.775),
  Graduate Power Electronics (6.334), Controls (6.302)

Work Experience

Vivint SmartHome   Lehi, UT
Electrical Engineer   April 2018 - Present

- Conducted early research and created initial prototypes with POE for product in development
- Designed a more efficient power tree for thermally constrained product by using simulation tools
- Wrote & implemented test procedures for WiFi connection quality, RF range testing, and power tree efficiency
- Delivered schematic & layout using Cadence Allegro & Altium for camera product in development
- Interfaced with third-party international fabrication & layout firms

Spyce, Inc.   Somerville, MA
Electrical Engineer   June 2016 - Dec 2016

- Early stage (5th) employee of innovative robotic kitchen startup
- Led integration of induction heater module into robot now operative in a Boston-based restaurant
- Problem solved and debugged with limited tools and budget
- Providing signal processing expertise to support start up remotely [ongoing]

Project Experience   See project pictures and demos at **katykem.com**

Laundry Sensor • Independent Project   2019

- Accelerometer sensor detects when laundry cycle is complete, sends notification via app
- Invented new product idea, implemented using Arduino and tested on laundry machine
- Conducted market research and pitched to Vivint

M. Eng. Thesis   2016-2017
Laboratory Assignments for Teaching Introductory Signal Processing Concepts

- Worked independently to create lab assignments for applications based sophomore-level signals class
- Implemented the labs in Python, with topics in audio, image, video processing

Robotic IV Pole • Product Design Lab (2.009)   Fall 2015

- Created innovative IV pole that autonomously moved with the patient
- Lead EE on team of 25 students in charge of: PCB design, sensor design & integration, and power systems

Laser Guitar • Microcontrollers Lab (6.115)   Spring 2015

- Designed, created, and fabricated entire electric guitar with laser strings and electric fretboard
- Programmed system in C & Assembly, designed peripheral electronics, lasercut guitar frame, and implemented
  electronic sound generation of multiple notes on PSoC microcontroller

Skills

- **Proficiency in:** Digital Signal Processing, Embedded Programming (C), Power Electronics,
  Circuit Simulation (LTSpice), System Integration, PCB Layout & Design (Altium, Eagle), POE
- **Familiarity with:** Cadence, Rapid Prototyping, Python, MATLAB, Assembly, Emissions testing,
  Smart-home radio protocols