March Saper

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EDUCATION

OLIN COLLEGE OF ENGINEERING
BS in Electrical and Computer Engineering
May 2019 | Needham, MA
GPA 3.97
Recipient of 4-year 50% merit scholarship

NATIONAL UNIVERSITY OF SINGAPORE
Research Exchange Program
May - July 2017 | Singapore, SP

SKILLS

Software

Python • Numpy • Flask • Scikit-Learn
Verilog • C • MATLAB • QT • Assembly

Electrical Hardware

PCB Development • Spectrum Analyzer
Waveform Generator • Lab Test
Equipment • STM32 (ARM)
Development

CAD & Electrical Software

Altium • KiCad • LTSpice • Solidworks

Interpersonal

User-Centered Design Practices
Collaborative Teamwork • IEC
Standards Interpretation • Qualitative
Research • Agile Development

COURSES

EE Hardware

Microelectronic Circuit Analysis
Analog and Digital Communications
Signals and Systems • Controls
Computer Architecture

Computational

Discrete Math • Bayesian Statistics
Software Design • Modeling and
Simulation of the Real World

Design

Affordable Design and
Entrepreneurship • User-Oriented
Collaborative Design • User Experience
Design

ACTIVITIES

Olin Library Aquaponics Project Leader
Honor Board Member (elected student government) • Collaboratory Liaison
Human Powered Vehicles Project Team

EXPERIENCE

ELECTRICAL ENGINEER & PRODUCT OWNER | Olin Capstone Program - GE Healthcare
Sep 2018 - Present | Needham, MA
On team of 4, developing power quality and environmental monitor for GE Healthcare.

- Acting as SCRUM Master through Agile development process.
- Writing embedded code in C to read data from chosen power quality IC using serial and other communication protocols.
- Developing Python scripts to send data to database through API calls.
- Tracking IEC and IEEE standards and planning EMI pre-compliance testing.

COMPUTER SCIENCE INTERN | Indiana University Purdue University - Indianapolis
June 2018 – Aug 2018 | Indianapolis, IN
In collaboration with fellow research intern, developed RaspBary: a Python-based clustering and prediction service designed with Indianapolis EMS to decrease response time to medical emergencies.

- Implemented online Hawkes Point Process estimation algorithm to model and predict the spatial-temporal probability of medical events in Indianapolis.
- Integrated RaspBary with front end through Flask-based API on AWS.
- Simulations of ambulance response to medical emergencies showed RaspBary decreased average driving distance by 65%.

TEACHING ASSISTANT | Olin College
Aug 2016 – Present | Needham, MA
Teaching assistant for Modeling and Simulation, Vector Calculus and Introductory Circuits classes. Responsible for grading assignments, holding office hours and providing feedback to course instructors.

ELECTRICAL & COMPUTER ENGINEERING INTERN | MultiSensor Scientific
Jan 2018 – May 2018 | Somerville, MA
Asked to return for part-time internship to assist with development of third iteration gas-imaging camera at clean energy startup.

- Brought up functionality of bare-metal board containing ARM processor.
- Designed PCB schematic in Altium which included stepper motor drivers, ADC thermistor sensing and DAC control of illumination bulb.

Jul 2017 – Aug 2017 | Somerville, MA
Prototyped control loop and hardware for component of gas imaging camera. Advanced UI capabilities of deployed system using QT. Revised C++ routines.

PROJECTS

NEWBORN WARMER FOR LOW-RESOURCE HOSPITALS Sep 2017 – Present
Working on team of engineering and business students through Olin's Affordable Design and Entrepreneurship Program. Developing durable, low-cost baby warmer to be sold to rural hospitals in Southeast Asia. In Jan 2018 traveled to Vietnam to interface with manufacturer and co-design alarm system with healthcare workers and patient families.

SINGLE CYCLE CPU Oct 2018
With a partner, designed and created 32-bit single cycle CPU behavioral verilog. Tested CPU using specially written assembly tests.

ADAPTIVE BIASING DIFFERENTIAL DIFFERENCE AMPLIFIER May 2018
Examined methods of adaptive biasing in differential difference amplifiers. Prototyped breadboard solutions using MOS transistors. Simulated behavior changes in LTSpice.

LEGAL COLLABORATIVE DESIGN Jan 2017 - May 2017
With team of 5, spent semester speaking with lawyers in legal aid and public defense through class in user-oriented design. By end of semester, codesigned several ideas to support the needs, values and motivations of this group.