MARCH SAPER

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EDUCATION

OLIN COLLEGE OF ENGINEERING Needham, MA GPA 3.97

Electrical and Computer Engineering B.S. Candidate MAY 2019

- Recipient of 4-Year, 50% Merit Scholarship.
- National Grand Challenge Scholar Candidate.
- T.A. roles include Modeling and Simulation of the Real World (Fall 2018), Vector Calculus (Fall 2017), Introduction to Sensors, Instrumentation and Measurement (Fall 2016).
- Coursework includes Software Design, Discrete Mathematics, Analog and Digital Communications, Microelectronic Circuit Analysis, Affordable Design and Entrepreneurship, User-Oriented Collaborative Design.

NATIONAL UNIVERSITY OF SINGAPORE Singapore, SGP MAY 2017 – JUL 2017

- Selected to join NUS Evolution Innovation Laboratory for summer semester I research-credit exchange program.

SKILLS

Software: Python • Numpy • Flask • Scikit-Learn • C • MATLAB **Hardware:** Verilog • KiCad • LTSpice • PCB Development • Bare Metal Development for STM32 (ARM) **Interdisciplinary:** Collaborative Teamwork • User-Centered Design Practices • IEC Standards Interpretation • Qualitative Research • Agile Development

EXPERIENCE

GE HEALTHCARE – OLIN SENIOR CAPSTONE PROGRAM IN ENGINEERING Needham, MA

Project Owner and Electrical Engineer SEP 2018 - PRESENT

On team of 4, developing power quality and environmental monitor for GE Healthcare. Responsibilities include managing product backlog through Agile development process and designing for IEC60601 compliance.

INDIANA UNIVERSITY PURDUE UNIVERSITY - INDIANAPOLIS Indianapolis, IN

Data Science Research Intern JUN 2018 – AUG 2018

Chosen to join 2018 REU cohort. In collaboration with a fellow research intern, developed RaspBary: a clustering and prediction service built in Python that forms the back end of an app designed with Indianapolis EMS to decrease overall 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%.

MULTISENSOR SCIENTIFIC Somerville, MA

Electrical & Computer Engineering Intern JAN 2018 – MAY 2018

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 using STM32Cube and implemented USART communication, readings of multi-channel ADC, and outputs to DAC.
- Designed draft of PCB schematic in Altium for control of camera's illumination component which included stepper motor drivers, ADC thermistor sensing, and DAC control of illumination bulb.

Engineering Intern JUL 2017 – AUG 2017

Prototyped control loop and hardware for component of gas imaging camera. Advanced user interface capabilities of deployed system for field engineer using QT development platform. Revised C++ routines.

MEDICAL DEVICE DESIGN

NEWBORN WARMER FOR LOW-RESOURCE HOSPITALS SEP 2017 – CURRENT

On team of engineering and business students, developing durable, low-cost baby warmer to be sold to rural hospitals in Southeast Asia. Work includes executing IEC-based tests to evaluate heating element and prototyping to fix design issues. In Jan. 2018 travelled to Vietnam to interface with manufacturer and co-design alarm system with healthcare workers and patient families

E.E. PROJECTS

Adaptive Biasing Differential Difference Amplifier - Breadboard Prototyping and LTSpice Analysis MAY 2018

USRP QAM Communication System with Hamming Error Correction DEC 2017

Microcontroller Development Board for ATMEGA32 OCT 2017

Electrical Sub-System of Autonomous Aeroponic Grow Bed OCT 2016 – DEC 2016