Portfolio: nathan-lam.com nathancy@hawaii.edu GitHub/LinkedIn: nathancy

#### Education

#### **B.S., Computer Engineering**

University of Hawaii at Manoa, May 2018

# GPA: 3.91

# Work Experience

## **Booz Allen Hamilton** | Summer Games Cyber Intern

May 2017 - Aug 2017

- Designed a proof-of-concept system based on blockchain technology to define trust relationships through vehicle-to-vehicle communications.
- Developed autonomous robotic cars using Python, LIDAR, and the ZigBee wireless protocol capable of relaying traffic information to surrounding vehicles for collective decision-making.
- Simulated successful high-trust communications protocol and autonomous resilience against the injection of malicious inputs by rouge actors.

### University of Hawaii at Manoa | Undergraduate Teaching Assistant

Jan 2017 - May 2017

Facilitated object-oriented programming course in C++ through weekly labs and assignments for 26 students.

#### **Spectrum Photonics Inc.** | Software Engineer Intern

May 2016 - Aug 2016

- Built data-logger web-server from scratch using the Django web framework to log data via UART on a Raspberry Pi into .csv files using Python scripts.
- Improved data collection efficiency and enabled instant data conversion.
- Designed web interface using HTML/CSS to create, edit, remove, or view logging data.

# **Project** Experience

### Micromouse | Lead Embedded Firmware Developer

Aug 2017 - May 2018

- Designed and built an autonomous self-contained robotic vehicle capable of navigating through a previously unknown maze with the shortest time and path.
- Implemented adaptive intelligence through positional/velocity controllers and a modified Flood Fill algorithm to reliably find the optimal route to the center of a maze.
- Won 2<sup>nd</sup> place at the IEEE Region 6 Central Area Micromouse competition.

# **REIS Sensing and Monitoring** | Lead Software Developer

Aug 2016 - Dec 2017

- Designed and implemented a dashboard for a highly distributed weather sensor network to analyze solar irradiance, pressure, humidity, and temperature patterns.
- Maintained data collection and storage infrastructure.

#### TextBuddy Android App | Software Developer

Aug 2016 - Dec 2016

Built application using Optical Character Recognition (OCR) technology to convert scanned text captured by a camera into a digital format.

#### Smart Campus Energy Lab | Embedded Firmware Developer

Spring 2016

Designed and programmed a low-cost, accurate, and reliable prototype weatherbox using environmental sensor modules to forecast weather patterns.

#### Liquid-Metal Electronics | Firmware Developer

Spring 2016

- Implemented continuous electrowetting automation and precise positional control for reconfigurable electronic devices using Galinstan.
- Eliminated manual actuation requirement and improved RF device prototyping.

**Skills** 

Languages: C, C++, Python, HTML, CSS, Java, JavaScript

Toolsets/Frameworks: Git, Django, Meteor, Semantic UI, Jekyll, Vim, Eclipse, Cygwin, IntelliJ

### **Activities**

**Awards** 

Webmaster, IEEE-Eta Kappa Nu (HKN) Honor Society, UH Manoa

Aug 2017 - May 2018 Aug 2017 - May 2018 Aug 2015 - Present

Treasurer, IEEE Student Branch, UH Manoa Member, IEEE Student Branch, UH Manoa

# **Chancellor's Scholarship**, University of Hawaii at Manoa

Aug 2014 - May 2018

Scholarships awarded to the top 5% of incoming freshmen worth \$10000/year.