

Naoki Yokoyama

US citizen

Website: naoki.io | [linkedin.com/in/naokiyokoyama](https://www.linkedin.com/in/naokiyokoyama)

Education:

Northeastern University Boston, MA

GPA: 3.64

May 2018 (BS), June 2018 (MS)

Electrical and Computer Engineering: Concentration in Computer Vision, Machine Learning, and Algorithms

Merit Awards & Honors: Joseph Spear Scholarship, Clara & Joseph Ford Scholarship, Karen T. Rigg Shining Torch Scholarship, SASE Kellogg Scholarship, Dean's Scholarship, Dean's List, Honors Program, Eta Kappa Nu

Courses: Robotics Sensing & Navigation, Assistive Robotics, Robotics, Intro to Computer Vision, Intro to Machine Learning, Classical Control Systems

Activities: Society of Asian Scientists and Engineers (Vice President, 2015-16; National InnoService Competition Team Leader - 3rd Place, 2014-15; Corporate Relations Chair, 2014-15;), Computer Science TA (2014-2016)

Technical Skills:

Software: C/C++, Python, OpenCV, ROS, LCM, MATLAB, Linux, Altium, Creo, HTML/CSS/JavaScript

Embedded Systems: I2C, SPI, Arduino, Raspberry Pi, BLDC motor driving, switched-mode power supplies

Professional Experience:

Bluefin Robotics (Electrical Engineering Co-op) Quincy, MA

July – Dec 2017

- Designed a ground fault detection system to sense and locate faults in the AUV using FFT and pilot signals, implemented in C.
- Designed a robust power interface board to provide power and communication busses between main computer, peripherals, and smart lithium batteries.

iRobot (Robotics Engineering Co-op) Bedford, MA

July – Dec 2016

- Created schematics and layouts for several prototype PCBs to test and evaluate circuitry for robot functions such as brushless motor driving, IR proximity sensing in varying lighting conditions, and bump detection.
- Designed the hardware and software of a smart Li-ion battery charger that charged batteries quickly and efficiently and communicated with its onboard battery management system through SMBus.
- Developed Python scripts for the Roomba 900 to collecting more information about the home using various sensors, which would be conveyed to users in an informative graphical map.

Medtronic (R&D Electrical Engineering Co-op) Boston, MA

May – Dec 2015

- Designed the schematic of a new version of the embedded system that interfaced the robot's computer with peripherals.
- Designed schematic and layout for the robot's power distribution system.
- Chose components and designed circuits that ensured durability and safety meeting industry standards.
- Developed Python scripts to allow users to change display and scaler settings using PySerial.

Projects & Other Experiences:

Udacity AI for Robotics Project | naoki.io/portfolio/lane_detection

Feb 2017 – May 2017

- Used OpenCV to highlight lanes in dashcam footage recorded from driving around Boston.
- Implemented filters/blurs, Canny edge detection, color and contour thresholding, and perspective warping in order to create binary masks that

Sherman Center for Engineering Entrepreneurship | naoki.io/portfolio/Sherman

Mar 2014 – May 2016

- Planned out and taught hands-on student-led workshops for groups of 20 students and faculty every month.
- Taught crash courses on Arduino, basic circuitry and debugging, closed loop control systems, 3D printing, and front end web design using HTML/CSS/JavaScript and Twitter Bootstrap.
- Demonstrated to all 1st year engineering professors how students could be introduced to microcontrollers and embedded systems using Arduino; Arduino was subsequently integrated into the official freshman curriculum.

Quadcopter | naoki.io/portfolio/quadcopter

May 2013 – May 2014

- Programmed from scratch in C with an Arduino communicating to a 10DOF IMU (accelerometer/gyroscope/magnetometer/barometer) via I2C for accurately measuring position and orientation to self-stabilize mid-air.
- Researched PID controllers, inertial measurement units, sensor fusion, interrupt service routines, and BLDC motor driving at the Polytechnic Institute of New York University.