Jonathan Murata

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(phone redacted)

EDUCATION

- **University of California, Berkeley** — Berkeley, CA
  B.S. Electrical Engineering & Computer Science — *June 2017 – May 2019*
  B.S. Mechanical Engineering — *August 2015 – May 2019*
  GPA: 3.96

  Relevant Coursework: *current semester

  Data Structures (CS 61B) ∘ Algorithms (CS 170) ∘ Artificial Intelligence (CS 188)
  Probability & Random Processes (EECS 126) ∘ Machine Learning (CS 189) ∘ Neural Nets* (CS 182)*
  Machine Structures (CS 61C) ∘ Operating Systems (CS 162) ∘ Parallel Computing (CS 267)*
  Feedback Control Systems (EE 128) ∘ Embedded Systems (ME 135) ∘ Mechatronics Design (ME 102B)

EXPERIENCE

- **University of California, Berkeley EECS Department** — Berkeley, CA
  Undergraduate Student Instructor, Course Reader/Tutor — *August 2017 - Present*
  - **Operating Systems (CS 162) 20-hour uGSI**: Spring 2019. Teach 2 discussion sections (40 students) per week. Hold design reviews for the Pintos Operating System project (Threads, User Programs, File Systems). Exam writing/grading and 2hr weekly office hours.
  - **Machine Structures (CS 61C) 20-hour uGSI**: Summer 2018, Fall 2018. Course content lead, managed homework, discussion worksheet, lab, and project preparation. Teach 2 discussion sections (50 students) per week. Teach 2 lab sections (30-40 students) per week. Exam writing/grading and 2hr weekly office hours. Rated 4.75/5 helpful in understanding material, 4.33/5 in teaching effectiveness.
  - **Data Structures (CS 61BL) Tutor**: Summer 2018. Lab instruction format of Data Structures. Assist in teaching 4 lab sections (20 students) per week. Assist in lab content creation and quality control.
  - **Control of Unmanned Aerial Vehicles (ME 136) Reader**: Fall 2017. First offering of the course. Quality control assignments and assist students with lab exercises.

- **Poly-PEDAL Laboratory** — Berkeley, CA
  Research Assistant — *September 2016 - June 2018*
  - **Inverted, Rod-Running Cockroach Robot**: Mechanical cockroach operating on an alternating tripod system to mimic real-life cockroach thin-rod running. 3D-printed limbs with laser-cut body. Servo motor and fishing line tension system. Design: Fusion360, Programming: Arduino.
  - **Squirrel Biomechanics Study**: Data collection using phantom cameras and image-processing software. Studied squirrel jump optimization and motor skills when leaping from varying-compliance rods.

PROJECTS

- **BobaBot**: Automatic Boba (milk tea & tapioca pearls) dispenser. 3 stage-dispensation (boba, tea, creamer) with rotating service plate. Embedded System Design Lead. Interfaced pumps and motors to Raspberry Pi and Arduino. Customized a two-phase commit system to synchronize hardware.
- **Kingdom Conqueror**: Find lowest cost conquering tour over a set of kingdoms. Converted problem to ILP and solved with Gurobi Optimization software. Competition Rank 4 of 230 teams.
- **Bumper Quads**: Siemens Research Hackathon with **Berkeley HiPeRLab**. Navigate quadcopter through a space without expensive range finding sensors. Touch-based mapping algorithm on physical quadcopter.
- **BearWatch**: Security tower to watch over items in selected area. When an item is removed, sounds an alarm and tracks/records the thief with a servo-mounted camera.

SKILLS

- **Programming**: C, Python, Java, MATLAB, LabVIEW
- **Design**: SolidWorks, Fusion360, AutoCAD, Adobe Illustrator