# Lauren Adachi

Email: lauren_adachi@brown.edu |Cell: (415)-828-9351 | Portfolio: laurenadachi.github.io

## EDUCATION

**Brown University** | Electrical Engineering Sc. B. | GPA: 3.8/4.0 August 2018-May 2022

- **Relevant Coursework:** Mixed Signal Electronic Design, Digital Electronics Systems Design, Design of Computing Systems, Linear System Analysis, Electricity & Magnetism, Electrical Circuits & Signals, Dynamics & Vibrations, Object-Oriented Programming, Data Structures & Algorithms.

## ENGINEERING & WORK EXPERIENCE

**Pufferfish (Pez Globo) Ventilator** | Hardware Team Member May 2020 – Present

- Lead development of the Interface PCB for user interaction with the ventilator
- Designed schematic and PCB (KiCAD) and selected parts with constraints from mechanical, clinical, and UIUX teams
- Assembled and tested PCBs and Raspberry Pi peripherals with oscilloscopes, function generators, and probes

**Tripathi Biomedical Engineering Group** | Firmware Developer April 2020 – Present

- Implement firmware updates for biomedical device in product development stage for PerkinElmer
- Write code in C for STM32 microcontroller for motor, heating, motor, flash memory, and spectrofluorometer units with FreeRTOS operating system and I2C, SPI, USB, and UART peripheral communication

**Brown Space Engineering** | Avionics Hardware Division Leader August 2018 – Present

- Lead team of 10 undergraduates to design electronic systems for CubeSat satellite
- Am responsible for EAGLE schematics and board designs for power, radio, and control systems
- Create high level design of systems for launch application to NASA including power and telemetry budgets
- Collaborate with Software, Payload, and Manufacturing leaders to ensure cohesive subsystem integration
- Mentor first-year students and new members through minority mentorship program and create technical trainings

**Brown School of Engineering** | Electrical Circuits & Signals Undergraduate Teaching Assistant January 2020 – May 2020

- Taught and held problem-solving and laboratory sessions for 100-student class, debugged students' circuits

**SF Public Utilities Commission** | Electrical Design Intern July 2019 – August 2019

- Designed and established receptacle circuiting plan for Rollins Road facility renovations, including electrical drawings, panelboard schedule, and lighting control panel schedule

**English for Action |** Volunteer Teacher August 2018 – December 2018

- Assisted English to Speakers of Other Languages classes by providing bilingual teaching support in Spanish and English

**Wittmann Laboratory at University of California, San Francisco** | Research Intern June 2016 – August 2017

- Optimized novel method for light-mediated protein control for optogenetics research
- Published in Columbia Jr. Science Journal ('17) & Cytoskeleton Dynamics: Methods and Protocols ('20)

## SKILLS

**Hardware**: KiCAD, EAGLE, Verilog, ModelSim, Breadboarding, Logic analyzers, Oscilloscopes, Electronics bench test equipment
**Software**: Python, Java, C for STM32 microcontrollers, git and GitHub, RISC-V Assembly, MATLAB, Microsoft Suite
**Prototyping**: Soldering, Raspberry Pi, Arduino, SOLIDWORKS, 3D-printing, Machining (lathes, mills)
**Relevant Projects:**

- Designed and implemented a single cycle processor in Verilog for FPGA, optimized to 50+ MHz clock frequency, wrote assembly programs and created testbench in ModelSim to verify functionality
- Designed, wrote, and tested a RISC-V assembler in Python from scratch
- Breadboarded functional dual slope and successive approximation analog-to-digital converters
- Programmed CPLD to create 4x4 multiplier, made scrolling message board using Xilinx FPGA

**Languages**: English (native) and Spanish (fluent)
**Interests:** figure skating, outer space, the outdoors, hiking, biking, painting, drawing

## HONORS & AWARDS

Winning team at *UC Berkeley's Bioengineering Honors Society Competition* for project on using CRIPSR to fight adolescent malnutrition (2016)