

# Lauren Adachi

Email: [lauren\\_adachi@brown.edu](mailto:lauren_adachi@brown.edu) | Cell: (415)-828-9351 | Portfolio: [laurenadachi.github.io](https://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 – September 2020

- 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 UI/UX teams
- Assembled and tested PCBs and Raspberry Pi peripherals with oscilloscopes, function generators, and probes

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

- 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** | Co-president and Avionics Hardware Division Leader August 2018 – Present

- Lead team of 30 undergraduates to design [CubeSat satellite](#) by defining and managing engineering requirements and goals, liaising with technical reviewers and advisors, and ensuring cohesive integration between satellite subsystems
- Wrote technical proposal detail and electronics systems overview, made high-level block diagram, and managed power and link budgets for application to NASA ELaNa satellite educational launch program
- Lead Avionics Hardware subgroup of 10 undergraduates to create high-level design of electronics systems including EAGLE schematics and board designs for power, radio, and control systems
- Mentor first-year students and new members through 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, Cadence Virtuoso, 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

---

Brooke Owens Fellowship Semi-finalist (2020-2021)

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