

# Lauren Adachi

Email: [laurensadachi@gmail.com](mailto:laurensadachi@gmail.com) | Cell: (415)-828-9351 | Portfolio: [laurenadachi.github.io](http://laurenadachi.github.io)

## ENGINEERING & WORK EXPERIENCE

---

### Blue Origin

*Avionics Engineer*, Lunar Permanence Avionics

Sept 2022-Present

- Delivered FPGA interposer and mezzanine PCBs in Altium. Selected parts, designed schematic, underwent peer review, executed 8-layer PCB layout
- Responsible for Single-Event Effects (SEE) Radiation testing of avionics components, including assessing existing parts radiation data and designing testing PCBs in Altium. Identified test case, developed schematics, underwent peer review, and executed layout for testing PCBs

*Avionics Systems Engineer*, Space Destinations Avionics

Jul 2022 - Dec 2022

- Responsible Engineer for Remote Input Output (RIO) and Data Acquisition (DAQ) subsystems for Space Destinations Avionics. Owned and managed all vehicle subsystem electrical interfaces, created system architecture and hardware trade studies for RIO and DAQ design, delivered Processor In the Loop (PIL) setup for RIO subsystem
- Led development of new input/output card for New Glenn RIO system including system requirements definition, assisting parts selection, performing obsolescence mitigation and procurement, facilitating radiation and EEE testing, and management of engineering teams (electrical, FPGA, FSW)

**Brown Space Engineering** | *Co-president and Avionics Hardware Division Leader*

Aug 2018 – May 2022

- Led team of 30 undergraduates to design [CubeSat](#) by defining and managing engineering requirements and goals, liaising with technical reviewers and advisors, and ensuring cohesive integration between satellite subsystems
- Awarded [\\$300,000 in launch services](#) from NASA's ELaNa satellite educational launch program
- Wrote technical proposal detail and electronics systems overview and managed power and link budgets for
- Led Avionics Hardware subgroup of 10 undergraduates to create high-level design and prototyping of electronics systems including block diagrams, KiCAD schematics, and board designs for power, radio, and control systems
- Mentored first-year students and new members through mentorship program and create technical trainings

**Sierra Space** | *Space Systems Engineering Intern*, Dream Chaser Program

May 2021- Jul 2021

- Designed test connectivity of Dream Chaser's communication system for joint test with ground support hardware and ISS
- Supported Electrical Design Specification Technical Panel by researching and evaluating solutions to electronics noncompliance issues
- Pioneered new power and data connectivity model of Dream Chaser using Model Based System Engineering in SysML

**Pufferfish (Pez Globo) Ventilator** | Electrical Design Team Member

May 2020 – Sept 2020

- Led 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

Apr 2020 – Sept 2020

- Implemented firmware updates for biomedical device in product development stage for PerkinElmer
- Wrote 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 School of Engineering** | Undergraduate Teaching Assistant, Multiple Courses

Jan 2020 – May 2022

- *Analysis and Design of Electronic Circuits* - Assist students with advanced concepts in analog circuits (BJTs, MOSFETs, diodes, amplifiers), laboratory circuit design challenges, and test bench equipment use in electronics lab
- *Digital Electronics Systems Design* - Assist students with digital circuit design challenges involving breadboarding, CPLD/FPGA code
- *Electrical Circuits & Signals* - Taught and held problem-solving and laboratory sessions for 100-student class, debugged students' circuits

## SKILLS

---

**Electronics:** Altium, KiCAD, EAGLE, Verilog, LTSpice, ModelSim, Cadence Virtuoso, Breadboarding, Electrical test bench equipment (Oscilloscopes, multimeters, logic analyzers), Soldering, Raspberry Pi, Arduino, SOLIDWORKS, 3D-printing

**Software:** Python, Java, MATLAB, Simulink, C for STM32, git, GitHub, RISC-V, Microsoft Suite

**Systems:** SysML, Cameo, JIRA, DNG

### Design Projects:

- Designed and implemented a [single cycle processor](#) in Verilog for FPGA, optimized to 50+ MHz clock frequency 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
- Wrote [20-page review](#) of spin-based electronics based in quantum physics theory
- Designed [dual-lead and PID control systems](#) for a magnetic levitation system in Simulink

## EDUCATION

---

Brown University | Electrical Engineering Sc. B. | GPA: 3.9/4.0

Aug 2018-May 2022

### HONORS & AWARDS

---

Brooke Owens Fellow, Class of 2021