BRANDON ALBA

branalba42@gmail.com • (619) 248-9478 • brandonalba.com • Davis, CA

3rd-year electrical engineering undergraduate with a focus in embedded systems and mixed-signal PCB design.

EXPERIENCE

PCB CAD Engineer, Ravata Solutions **Feb 2020 - Present**

- Extensive analog circuit analysis of a bioimpedance sensing board featuring constant current feedback (galvanostat) and highly sensitive measurement requirements. Successfully identified and addressed multiple areas for optimization, improvement, and correction and lowered board cost by roughly 30%
- Wrote firmware for the board for an STM32F4 MCU and an accompanying stepper motor-based pump module. Employed debugging, ADC data collection, and hardware SPI/I2C/UART interfacing. Also wrote an accompanying python script to offload captured data via serial into a CSV file for postprocessing
- High-volume design and optimization of many PCBs, including high-frequency (>1MHz) bioimpedance sensing motherboards, high-density calibration chip, and power management modules

Electrical Team Lead, Space and Satellite Systems **May 2020 – Present**

- Leading team designing electrical subsystems for a CubeSat from scratch (see my own technical contributions in the “Projects” section below)

Physics Tutor, UC Davis AATC **Feb 2020 – Present**

- Peer tutor for students taking lower division physics courses at UC Davis. Includes individual and group tutoring
- Topics range from classical mechanics to special relativity and quantum physics. Mathematics as advanced as multivariable calculus and complex differential equations are used

PROJECTS

CubeSat Electrical Bus **Jan 2019-Present**

Cell Sorting Bioimpedance Sensor **Jun 2019-Present**

Professional Shower Taker **Oct 2018-Present**

EDUCATION

University of California, Davis, BS Electrical Engineering **2018 – 2022**

- GPA 3.5
- Lead of satellite club electrical team

SKILLS

- Embedded systems: STM32/Atmega MCUs, I2C, SPI, UART, ADCs, STM32CubeIDE (HAL Libraries) and VSCode (PlatformIO)
- PCB Design/Layout: Autodesk Fusion 360, KiCAD, mixed-signal design, impedance matching
- Programming: Python, C/C++(embedded), UNIX systems(Arch Linux daily user)