MIHIR SHEVGAONKAR

mihir@protonmail.com
(408)-772-1026

PROFILE

Portfolio: **www.mihir.space**
Capstone Project: **ionicskies.com**

UC Santa Barbara 2021
B.S. Electrical Engineering
3.66

COURSEWORK

Analog Circuit Design
Computer Vision
Digital Design
Digital Signal Processing
Electromagnetism
Haptics
Linear Systems (Graduate)
Nonlinear Dynamics
Probability & Statistics
Semiconductor Devices

HARDWARE

PCB Design
AVR & STM microcontrollers
Switching Circuits
Linear Amplifiers
Battery Design
Arduino, Raspberry Pi
3D Printing, Machining
Composites

SOFTWARE

Python(numpy, keras, opencv, pytest, logging, multithreading)
Embedded C
Matlab
Jupyter Notebook
Git, Makefiles, Bash
Kicad + Eagle
Solidworks + Inventor
LaTEX

WORK EXPERIENCE

Tesla

Thermal Integration Intern
06/2020 - 09/2020

- Built up software infrastructure for automated testing of Tesla Semi thermal systems using thermal buck - preventing 1yr delay of release
- Designed automated thermal buck self test with component level and system level parts to verify that all systems are operational before more complex tests
- Used Jenkins, CAN+UDS protocols, SCPI, interlock circuits, high power cabling, and various python libraries - pyserial, logging, pytest, threading, internal libs

CTRL-Labs (now Facebook Reality Labs)

Hardware Engineering Intern
06/2019 - 09/2019

- Worked on analog front-end(AFE) of electromyography armband that decodes physical muscle movement from signals travelling through neurons in the arm
- Proposed and executed AFE biasing voltage changes that save space, power, and complexity, extensively verified and analyzed results in Jupyter Notebook
- Performed oversampling experiments to verify SNR improvements, uncovered and diagnosed SPI timing issues that were exacerbated at higher sampling rates

LEADERSHIP EXPERIENCE

Ionic Skies (in progress!) - ionicskies.com

Capstone Project Lead
03/2020-Present

- Started 17 person capstone team to build first fully controllable ionic wind aircraft
- Directly technically involved in characterization and development of ionic thrusters, DC-DC power converter, and integration with airframe and launcher
- Developing understanding of HV electrostatics & corona discharges, high frequency switching circuits & PCB layouts, and aircraft design principles

PERSONAL PROJECTS

Ball Balancing Robot (BB-9)

- Robot that balances on a spherical wheel - a soccer ball
- Omni-directional wheel rotation
- Acc+gyro sensor fusion thru complimentary filter, and PID controller achieves robust balance
- Learned PCB design, reflow soldering, Kalman filtering, Lagrangian mechanics, and wrote I2C driver along the way

And More

- Bamboo bike
- Weight sensing electric longboard
- 3-axis CNC router
- Built my personal website **www.mihir.space** using HTML, CSS, and Bootstrap; features pictures and videos of all my projects!