# Navid Mir

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## Education

**ELECTRICAL ENGINEERING B.S. |** *UNIVERSITY OF CALIFORNIA, SANTA BARBARA (UCSB)* JUNE 2021

- 4.0 GPA
- Emphasis on *Embedded Systems* and *Signal Processing*
- 7 x Dean's Honors List for Engineering, Engineering Honors Student, Tau Beta Pi Honors
- Activities: IEEE UCSB Chapter, Rocket Project Laboratory, Intramural Basketball, Pop's Orchestra

## Work Experience

**ELECTRICAL ENGINEERING INTERN** | *VIVAX-METROTECH* JULY '19 – SEP '19

- Tested and optimized RFID transmitter circuit to attain required antenna output power while maximizing efficiency
- Used Altium Designer for PCB design of several configurations of the RFID transmitter circuit
- Designed efficient high voltage switching power supply for D-class amplifier, controlled with C code on ARM-based MCU

**MACHINE LEARNING INSTRUCTOR** | *IDTECH* JUNE '19 – JULY '19

- Taught an introductory machine learning with Python course to a class of 10 high school students
- Instructed students about neurons, neural networks, and supervised learning algorithms
- Led two projects both involving training a neural network to perform linear regression: one with a self-defined neuron class and one using the TensorFlow library

## Projects

*A portfolio of my projects can be found at my website: navidmir.com*

**LIQUID OXYEGEN/METHANE ROCKET** | *ROCKET PROJECT LABORATORY AT UCSB* APRIL '19 – JANUARY '20

- Worked on Avionics sub-team of 30-person group designing a rocket to deliver 1 kg payload to 45,000 ft
- Researched on Kalman filtering algorithm to process sensor (IMU, barometer, GPS) data to estimate rocket position
- Configured RF communication between two development boards using LoRa to allow rocket to ground communication

**ELECTROVIBRATIONAL DISPLAY RESEARCH ASSISTANT|** *RE TOUCH LAB* FEBRUARY '19 -MARCH '19

- Tested and analyzed high voltage converters needed for capacitive touch displays that mimic textures

**LED CUBE DISPLAY |** *IEEE UCSB CHAPTER* OCTOBER '18 – FEBRUARY '19

- Assembled 4 x 4 x 4 LED cube and wrote Arduino microcontroller code to make designs display on the cube

**FACIAL-RECOGNITION SMART LOCK |** *SB HACKS V HACKATHON* JANUARY '19

- Designed and put together hardware and worked on software integration of a Raspberry Pi that accesses GCP server for a facial-recognition program response to open a lock for our team hackathon project, "openSesame"
- Awarded "Best Security Hack Award" sponsored by Arthrex, Inc.

**PLASMA SPEAKER |** *IEEE UCSB CHAPTER* OCTOBER '17 - MAY '18

- Assembled circuitry involving signal generators, amplifiers, and transformer to produce sound with high voltage plasma arc

## Skills

**SOFTWARE:** Verilog RTL programming, Quartus II and Xilinx FPGA simulation, C, C++, Arduino programming, Altium Designer PCB design, MATLAB, Python (TensorFlow, Socket), Java, Jupyter Notebook, Linux, SolidWorks CAD, LTspice circuit simulation

**HARDWARE:** Designing and analyzing digital/analog circuits, microcontroller circuits using Raspberry Pi, microprocessor circuits using Arduino, through-hole and SMD soldering

## Awards

**BOEING SCHOLARSHIP |** *UCSB COLLEGE OF ENGINEERING SCHOLARSHIP COMMITTEE* JANUARY '19

**ARTHREX BEST SECURITY HACK AWARD |** *SB HACKS V HACKATHON* JANUARY '19

**ENGINEERING WRITING EXCELLENCE |** *UCSB WRITING PROGRAM* MAY '18