SHIVANI SHAH

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EDUCATION

University of Michigan **Ann Arbor, MI**
BSE, Electrical Engineering - GPA: 3.606/4.000 April 2017
MSE, Embedded Systems - GPA: 3.218/4.000 April 2018

WORK EXPERIENCE

Neuralink **Fremont, CA**
System Electronics – Surgical Robot June 2018 - Present

- Designed an Illumination Driver allowing up to fifteen LEDs to pulse with independent duty cycles synchronously with robot camera frame rates which reduced power requirements for the system and improved mechanical packaging.
- Integrated all peripheral circuitry required for robot digital input and output including hit and hold solenoid drivers and closed loop laser drivers on one printed circuit board (PCB) resulting in the reduction of robot manufacturing time and cost.
- Tested electronics for a Low Voltage Differential Signal (LVDS) commutator which was incorporated to allow for multiple hours of rat recordings with minimal human interference
- Created and organized manufacturing of full robot wire harness using Solidworks Electrical 2D

Tesla Energy **Palo Alto, CA**
Firmware Intern Summer 2017

- Determined analog circuit and firmware parameters for solar arc fault detection through data collection and simulation in matlab
- Modelled industrial inverter state machine using matlab stateflow which resulted in easier component debugging and cleaner overall model workflow

Microsoft **Redmond, WA**
Software Development Intern Summer 2016

- Created windows application to be published in order to expose 3rd party developers to a new API, application program interface, that allows access to depth, infrared and RBG data streams
- Wrote applications to target corner cases for certain functionalities of the API resulting in easier reproduction of bugs for the developer and therefore faster turnaround of resolved code

LEADERSHIP EXPERIENCE

Baja Racing SAE **Ann Arbor, MI**
CVT System Co-Lead, Testing Lead Fall 2013-Spring 2018

- Worked with a group to lead the design of Michigan Baja's first ever electronically controlled variable transmission (EVT) which has the potential to reduce tuning and manufacturing time of the system while maintaining a high level of performance.
- Utilized strain gauges and hall effect sensors on a custom CVT dyno to measure torque and speed of both primary and secondary clutches. This data allowed us to verify efficiency of CVT and shifting characteristics such as engagement point, steady state RPM of the primary clutch and shift ratio.

Embedded Control Systems **Ann Arbor, MI**
Graduate Instructional Assistant Winter 2017-Present

- Lead weekly labs and office hours. Course covers and implements topics including memory mapped I/O, Interrupt Basics, CAN communication, PID control, and Real-time Scheduling

SKILLS

Computer Aided Design: Solidworks (Mechanical and Electrical 2D), CATIA, Altium
Communication Protocols: I2C, SPI, UART, CAN, LVDS
Coding Languages: C++, Python, C
Machining: Mill, Lathe, Band Saw, Chop Saw