# UCSB | Hyperloop Pod Prototype          Ryan Lorica

## Overview

The goal of this project is to construct a prototype pod for the SpaceX Hyperloop 2018 Competition. The pod it to translate via levitation 75 feet forward and backward in minimum time. My participation in this project has been pre-approved by Yoga for final project credit.

## Peripherals

1. Six ultrasonic sensors
2. Four LIDAR sensors
3. Battery management system
4. Four maglev motors (via two ESC)
5. Four servo operated gimballing systems
6. GPS
7. External Wi-Fi module

Figure 1: Current circuit schematic (Subject to change)
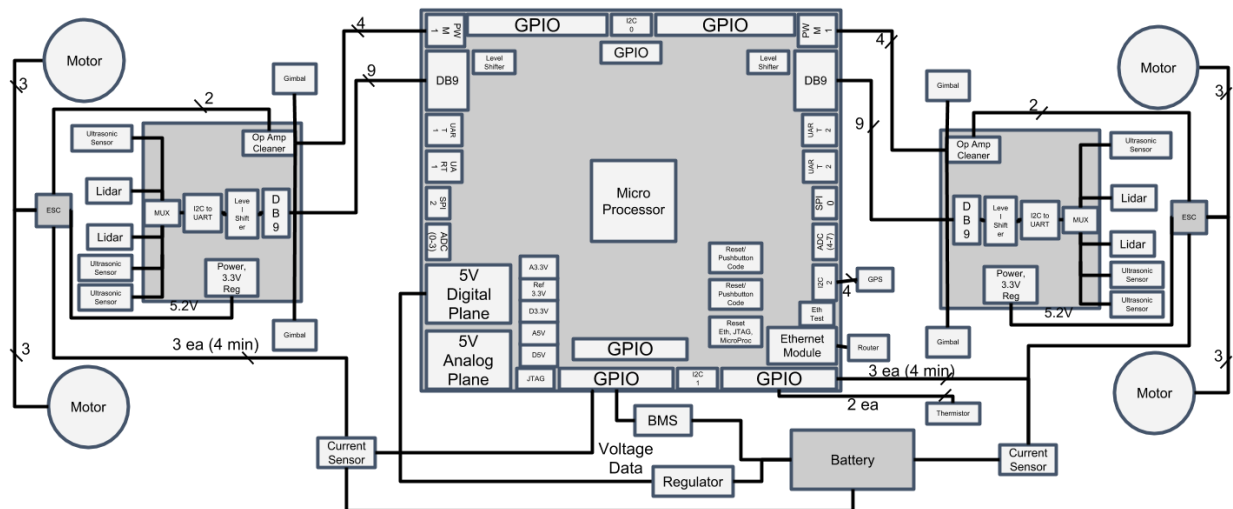
## Software Design

The software is to use a state machine to control the departure and return routine. The state transitions will be calculated via input from the sensors. Additionally, feedback from the sensors will either adjust speed or halt the machine if deemed outside the range of stable operation.

## Personal Responsibilities

My responsibilities include designing and building the circuitry and software which interfaces between the microcontroller and the ultrasonic sensors and LIDAR hardware.