ECE Senior Design Weekly Report

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Week’s Task: This week I provided support for the levitation task. Also, I began creating parts for our PCB layout. Finally, I began writing code to establish a connection between the Raspberry pi and the microcontroller inside of the globe, using the RF transceiver modules.

Results: Most of my time this week was spent providing support for the levitation task of the project. The main issue we were having was positioning the hall-effect sensors on the electromagnets in order to get an appropriate reading to implement the PID controller. Part of my support involved construction a new layer for our testing rig, which measures the displacement from the center. This is meant to be used to map a displacement with respect to a coil, with the reading from the differential amplifier circuit. Another task I had this week was to design some of the parts we will be using for our PCB layout. In order to speed up the PCB layout process, I decided to begin expanding our team’s parts library to contain some of the parts we will use. This includes creating a cell, and a symbol for each unique part. Finally, I also began setting up the RF transceiver modules to establish a connection between the Raspberry Pi and the microcontroller inside the globe.