ECE Senior Design Weekly Report

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Team Name: Globetrotters Lab Section: 4

Week’s Task: My main task this week was to design the PCBs for the levitation system. I also provided support for the levitation team by soldering the PCBs and helping with the assembly of the system.

Results: I designed two PCBs, one with all the traces to connect the main components of the system, and another one to solder and hold in place the hall-effect sensors at the top of each of the electromagnets. Both PCBs had the same mounting holes in order to hold them together tightly. They both also had holes for the cores of the electromagnets to go through, and sit flush with the surface of each PCB. Both PCBs are connected together through a 6 pin header. Two pins connect the Vdd and Gnd to bot PCBs, and the other four connect the output from the hall-effect sensors to the system below. Another important aspect of the PCB design was creating a big enough trace to let the current flow between the coils and the H-bridges. To do this, I designed the traces to be 100 thousands of an inch, and I filled these traces with solder, to increase the thickness of the traces. Another one of my tasks this week was to prepare the PCBs to assembly the system. I soldered all the important elements to the PCBs, and got them ready for assembly.