ECE Senior Design Weekly Report

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Team Name: Globetrotters Lab Section: 4

Week’s Task: This week I shifted my focus from the rotation of the projected globe, to the rotation of a physical levitating globe. Also, starting this week I will be providing support for the levitation part of the project. Finally, another task for this week was to choose a microcontroller for the levitation/rotation system.

Results: After some more research, it seems the most viable option for rotating the globe is the method implemented by Alexey Sha (project originally brought up by Kevin Warner). In his project, Alexey Sha attaches a DC motor to the levitating surface. This motor is, in turn, attached to a plastic ring which holds both hemispheres of the globe. This motor is powered by coupled inductors. I will begin working on the implementation of this method for our globe. I also read more in depth the research provided by the levitating team, Chris, Rence, and Jake. I will most likely work on programming the microcontroller to fit their needs. After some reading and collaboration with Leon, we have decided to use a 16bit PIC microcontroller. The microcontroller has 53 I/O pins, 2 ADC modules, 4 Analog comparators, 9 16bit Timers, USART, among other features. We believe this uController will be more than enough for our needs.