ECE Senior Design Weekly Report

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Team Name: Globetrotters Lab Section: 4

Week’s Task: My tasks this week involved testing and writing code to drive the motors for the internal rotation of the globe. Also, I modified once again the script for the projected rotation. Finally, another task for me this week was laying out a breakout board for our microcontroller.

Results: After this week, I have successfully written code to drive the two different motors that we ordered. Once we start building the internal rotation mechanism, I will expand on the code I have written in order to implement an IR based communication protocol to give commands t the microcontroller to drive the internal motor accordingly. For the rotation script of the projected globe, I included functionality for a swipe left and swipe right commands. The behavior of the globe’s image under these two commands is a decremental rotational velocity. Because of this, I made a decision to rewrite the script to control the globe with a variable signed rotational velocity, rather than a state-descriptive approach, which matched a specific velocity to each state. For the swipe left and swipe right commands, I max the velocity of the globe to 9 frames per tick (around 135 degrees per second), and smoothly decrement it to the idle velocity of around 15 degrees per second. The transition from max velocity to min velocity takes approximately 5 seconds. We were, overall, happy with the results. Finally, another result from this week’s efforts was our first CB board. Together, Mark and I printed a breakout board for our microcontroller. We are now prepared to do the layout for all PCB boards our project will require.