ECE Senior Design Weekly Report

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Week’s Task: Continue research and begin implementation of interactive rotation algorithms through PyOpenGL. Research algorithms for transformation of equirectangular map images into azimuthal equidistant images for the projection.

Results: As a result of this week’s efforts, I have begun experimenting with different interactive animations with PyOpenGL, as well as familiarizing myself with some of the libraries it has to offer. On my personal RaspberryPi, I am able to run the PyOpenGL script as a separate xserver from the terminal. This allows the PyOpenGL script to run in an optimized graphical interface, where the animation is the only xserver process, resulting in a more smooth animation. Also, after some research it seems like the best way to transform our projection image from an equirectangular map to an azimuthal equidistant projection, is by using an api called proj4. This api allows us to convert the cartesian coordinates from the equirectangular image into geographic (Lat/Lon) coordinates, and from there, write a script to create the azimuthal equidistant image for the projection.