Lab 04: Oculus Go Viewing

Due: September 19, 8:30 am

Part I: Beachball

- **Create a 2048 wide by 1024 high equirectangular image for 360 degree viewing in the Go with the following properties:**
  - Between longitudes -180 and -135 and 135 and 180 it is Yellow
  - Between longitudes -135 and -45 it is Red
  - Between longitudes -45 and 45 it is Green
  - Between longitudes 45 and 135 it is Blue
- **Load the image into the Go.**
  - Describe your impressions. Does it appear as you expect? Do you fell immersed? Is the image distorted? What do the ”poles” look like?

Part II: ”Flat” projection

- **Write a python script to perform flat projection as described in class**
  - Center the image at (0 Long, 0 Lat)
  - Determine the largest dimension of the image, i.e., Rows or Columns and set the viewing distance equal to β times that dimension
    - ✓ Experiment with values of 0.5, 1.0, and 1.5. Show in your lab report the processed images
  - Use test image 2 on Canvas
  - When viewed, does the image appear flat as anticipated?

Part III: Stereopairs

- **Take a stereopair with a phone camera**
  - Be sure to keep the camera perpendicular to the floor and not to move too much between the left and right pictures. Keep the image planes of the pictures co-planar
- **Process the image as described in the lecture into a 4096 by 4096 stereopair for 360 degree viewing**
  - You can resize the images as desired and convert them from jpg to bmp using any desired tool
  - Write a Python script which inputs the re-sized left and right images, pads them with black, and stacks them
- **Include a description of your processing steps in your writeup**