CS4475 - Assignment 6

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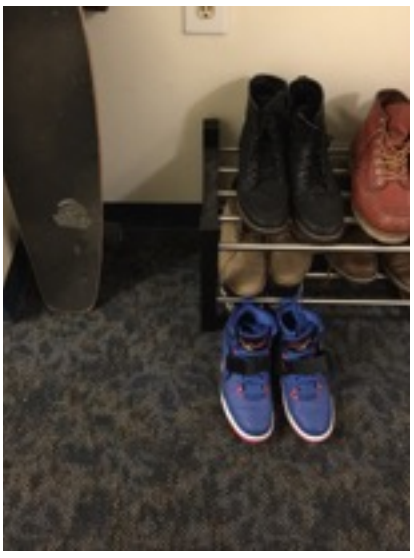
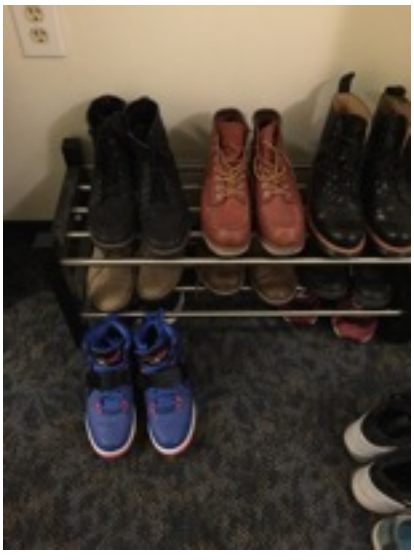
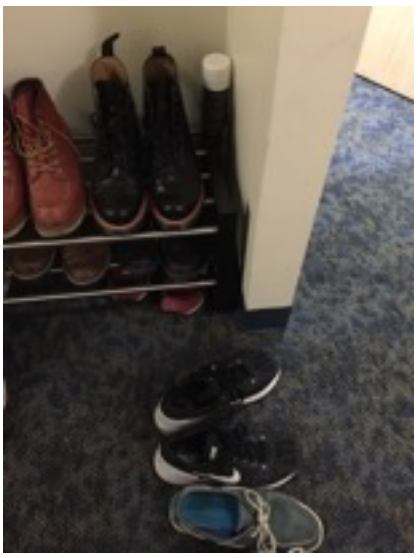
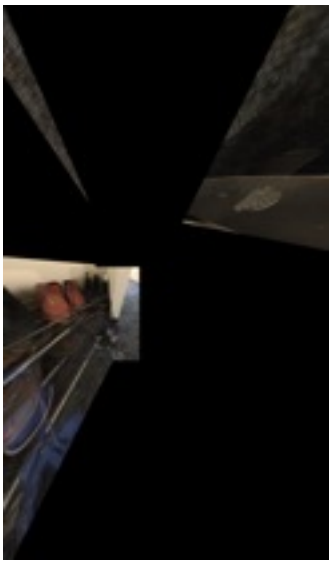
For this assignment, I chose to make a panorama of my shoe rack. When I applied my function to the three photos I took, I got an unexpected result. The image was warped very strangely and was far from being a panorama. Running the functions on the given test images worked fine, as seen below, but the photos I have used did not work. This may be because there were not many key points to match the images. Here are the results.

Test Image

My Images

Result

I am not satisfied with this result, since it did not produce a proper panorama image. The problems may have been that the pictures did not have many key points, and/or the key points were not very distinct. Changing the number of matched features showed different results. When I decreased the number of matched features, photos did not warp correctly, and increasing it too much led to no matching images. There was a sweet spot for the number of matched features, since there are some deviances in pixel values of different key points. The panorama I attempted to make was a planar panorama, by moving horizontally, with no rotations. While the result was not pretty, This was a good learning experience about panoramas and how images are matched/stitched. For my assignment, the blending technique I attempted was averaging the pixel values that were overlapping with a gradient function, but the results did not show that. To implement this blending function, I traversed through each pixel in the image, and if the pixel was black, I don't take the weighted average and if it was not, I take the weighted average. Since the photos had high resolution, the processing time took a very long time.

This is how my final image should have turned out.