

Assignment 2 panorama

1. Detecting matching points and generating descriptors with SIFT, then output the good-match pairs of points in Mat format.
2. Found random 4 points and store those random number in vector—idx
3. In corresponding matching points to compute a homography by DLT. Using homography to compute the outlier proportion—e, then using e to compute the N which is the iteration times then do sample_count ++ , finally terminate when $N > \text{sample_count}$.
4. Taking one of the image as the standard coordinate and computing the homography for all other images which transform their coordinate to standard coordinate.
5. Compute the maximum value and minimum value of X and Y and using that to determine the final panorama Mat's size.
6. For every pixel in panorama (initialize as a black Mat), take the maximum value in every position among all the images as the corresponding pixel value in the panorama Mat.

Reslut:

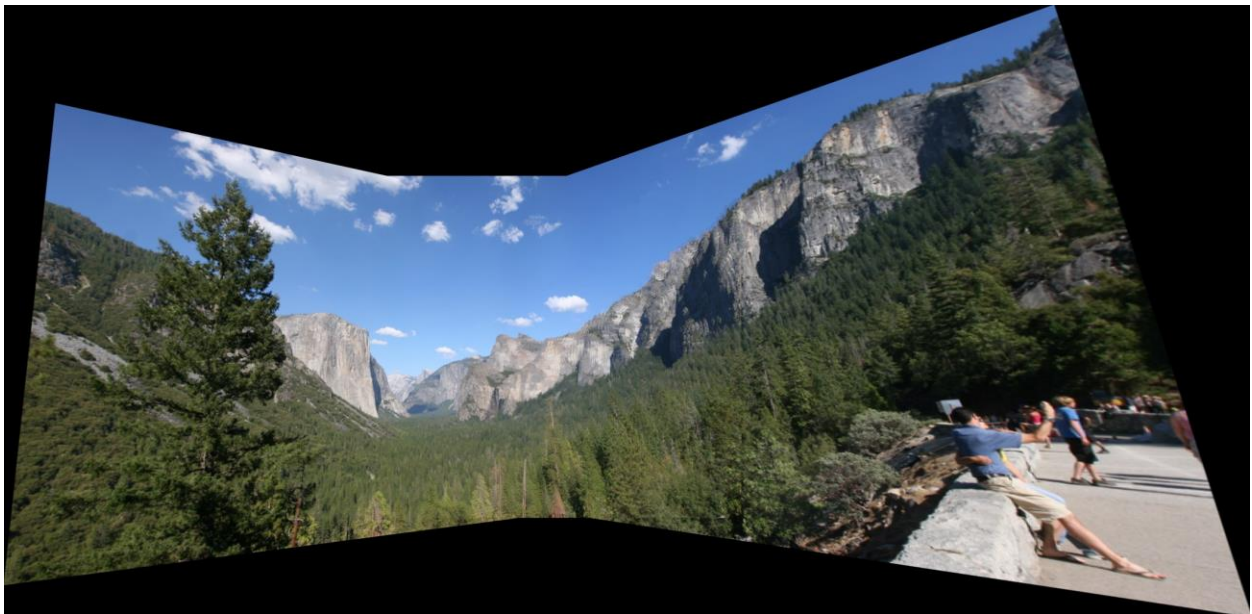


Figure 1

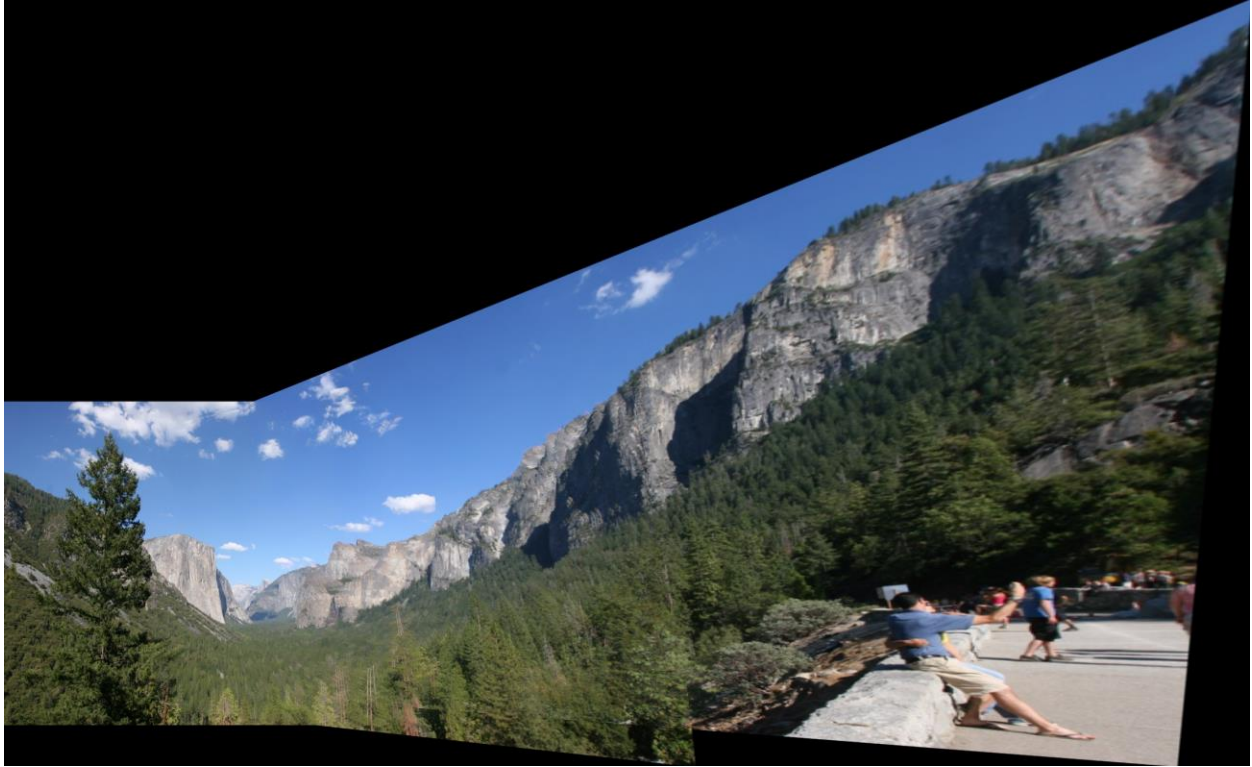


Figure 2



Figure3

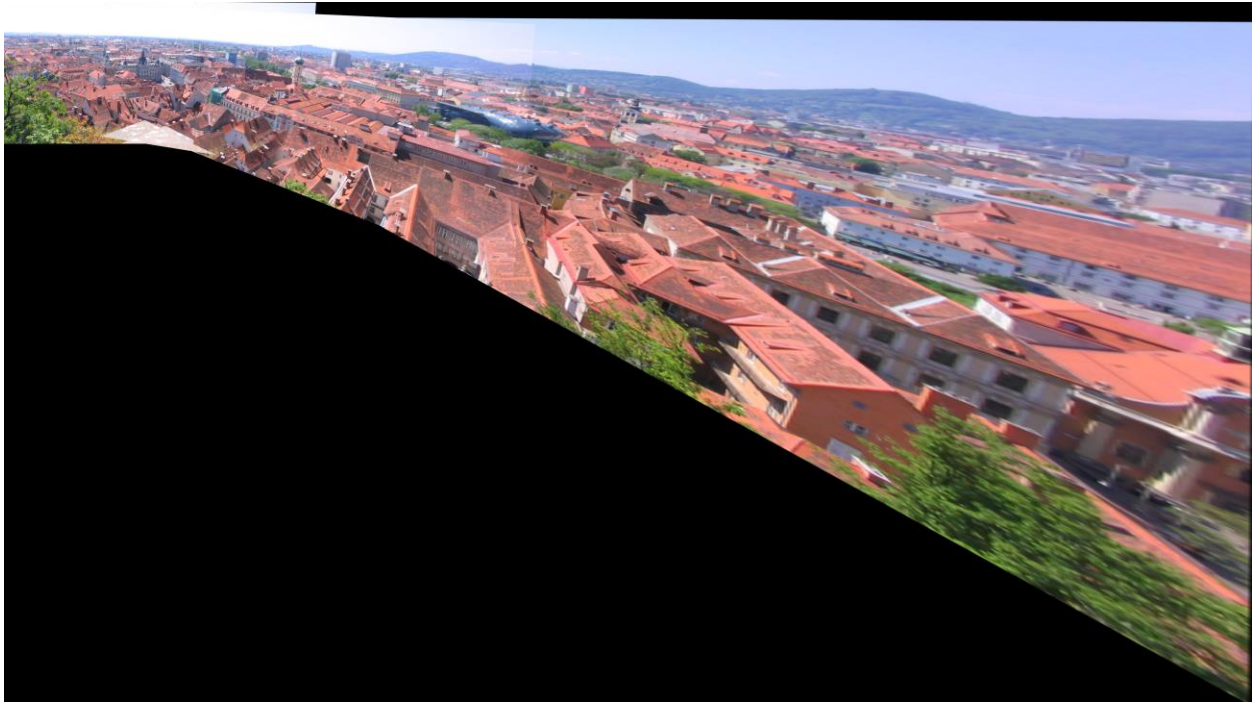


Figure 4

Conclusion

As shown in the result section, the panorama is somewhat skew. Under several attempts, I got the conclusion that the panorama image's quality is largely depend on the image which is treated as the standard one (Compared between figure1 and figure2). I also using average of every images' pixel value to compute the panorama, but I got a pretty blurred image so I chose to use the max value and got a relatively better result.