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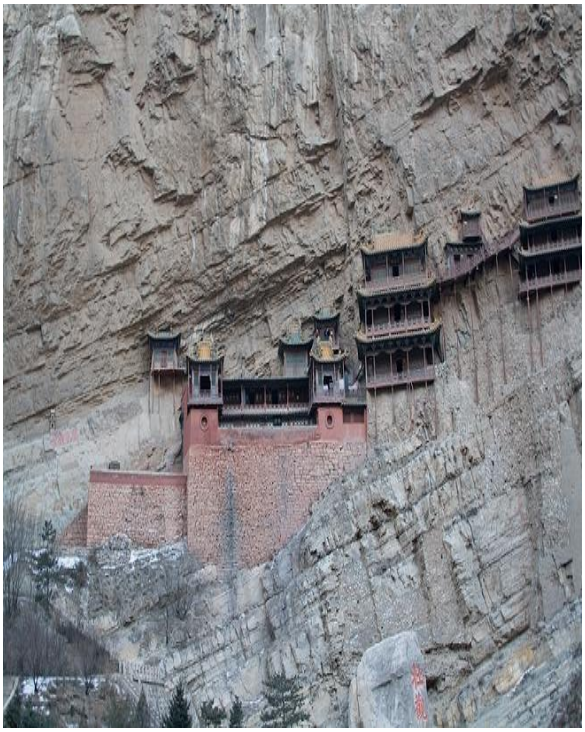
Image Processing Exercise 3, Panorama

In this assignment we were asked to merge two pictures into a panoramic photo. This is a commonly used idea in the world of image processing today, as even the most basic of photo apps have the option to create a panorama. The idea is to find the key points in each photo that can potentially act as merging spots, and then to find matches. We then use those found coordinates to send to the RANSAC function, which uses direct linear transformation on sets of random points in order to find the best possible homograph. The homograph is used to be able to stitch both the images together in the most smooth and seamless way possible. The code for the algorithm is attached, and below are the two images and the final result.

Original Images:



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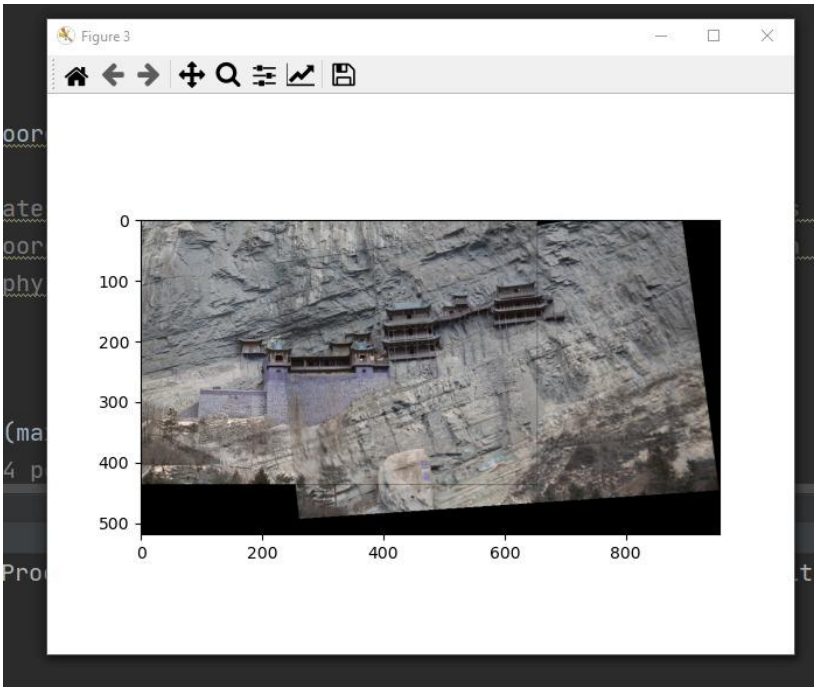
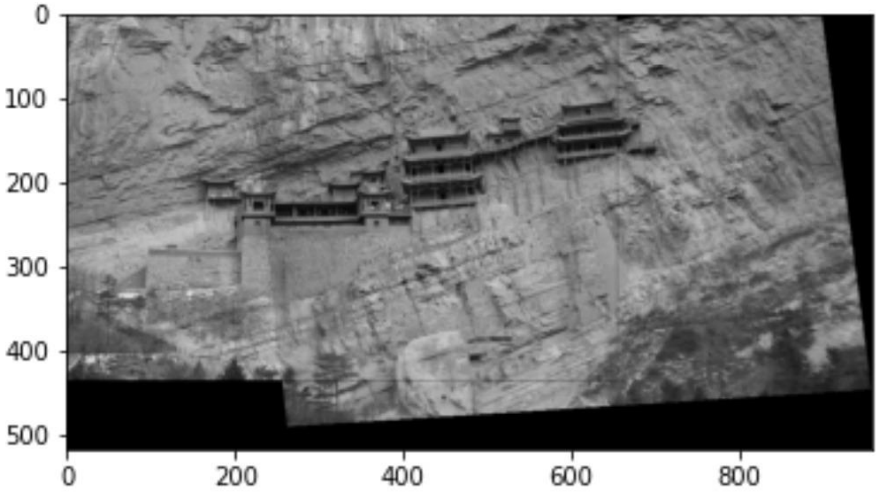
The idea in choosing the best homograph is to find the most fitting points of contact. Here, after calculating multiple homographs, we choose the best by selecting the one with the most inliers that fit out threshold.

Final Results:

The picture we got:



Expected Picture:



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As we can see, the images are connected at a slight angle, so that the seam is as most accurate as possible. We can see that the resulting panorama is correctly stitched, and that our algorithm works as expected.

If we look at the image, we can see black around the edges. An idea for improvement is to pre-calculate the dimensions of the resulting image, and to fit it exactly to these. This will allow us to stitch together the image without the frame around it, which is caused by taking a fixed size.