

Assignment 2

Homography Estimation (Part 1)

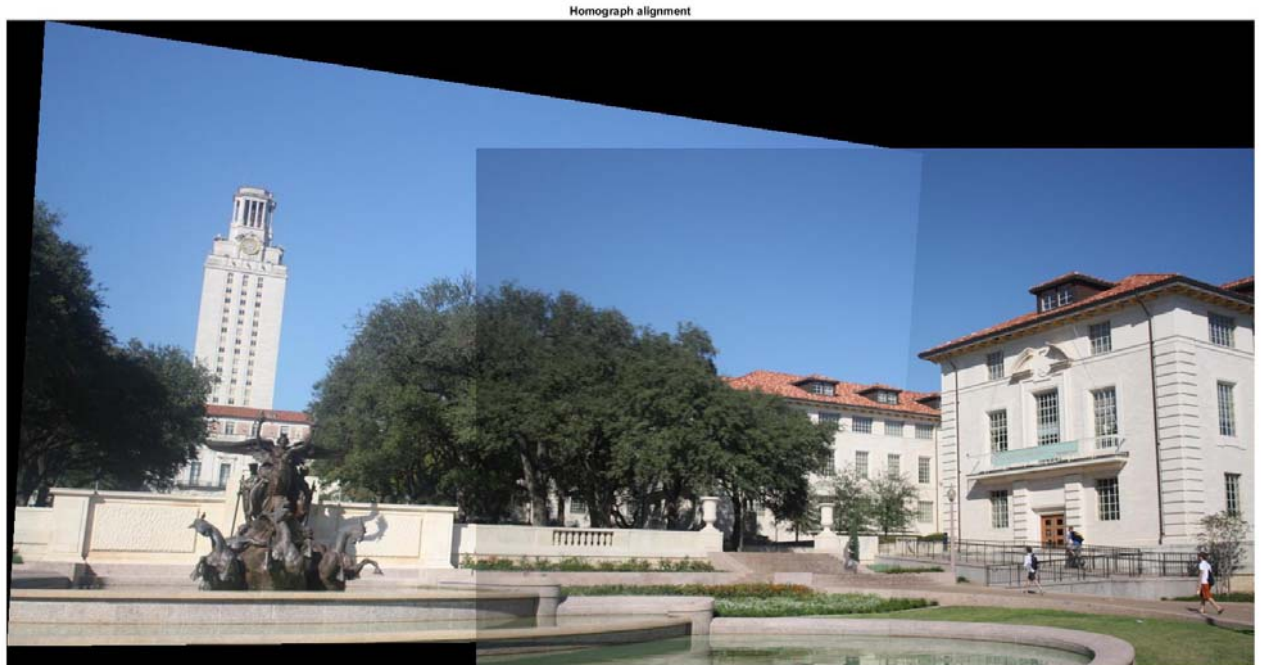
- a. The code uses feature matching method to stitch the images to a final product. First, the corners are detected in the two images which are then attached to the neighborhood pixels correspondingly to produce a set of smaller parts of images which were then matched to each other. This matching of neighborhood happens after the pixels are flattened to a 1-D vector and normalized to have zero mean and unit standard deviation. If a successful match happens, lines are drawn between them to help the viewer visualize them easily. RANSAC algorithm is used for estimation of homography matrix after taking in 4 random samples of pixels and estimating homography from it. We then apply the homography transform to points from first image and compare it with points on the second image and check if the distance between the two points is below the specified threshold. If the distance is below the threshold, the points are considered as inliers. We repeat this process to get the most inliers as possible for accurate stitching.

b.

	Homography Inliers	Ag. Residual
uttower	115	1.1005



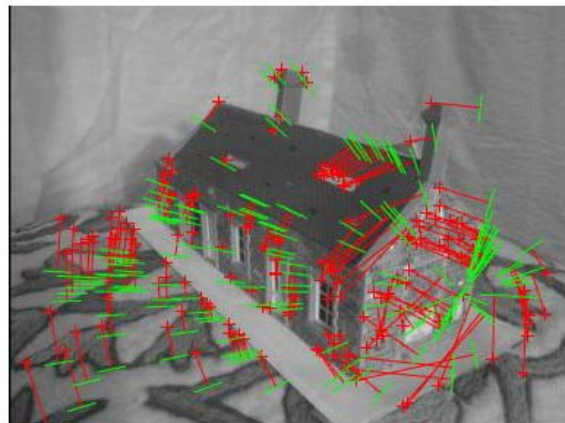
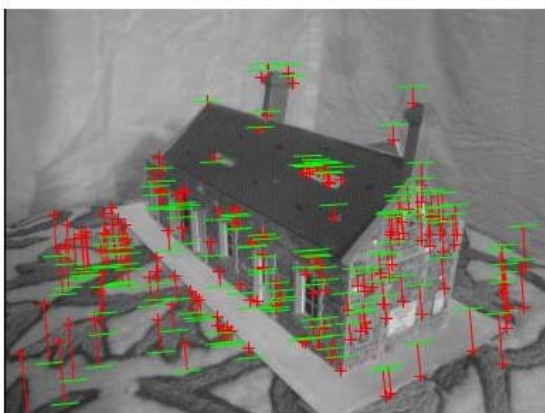
c. Homography alignment

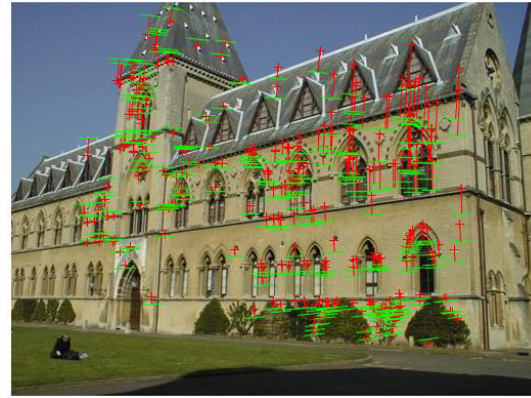
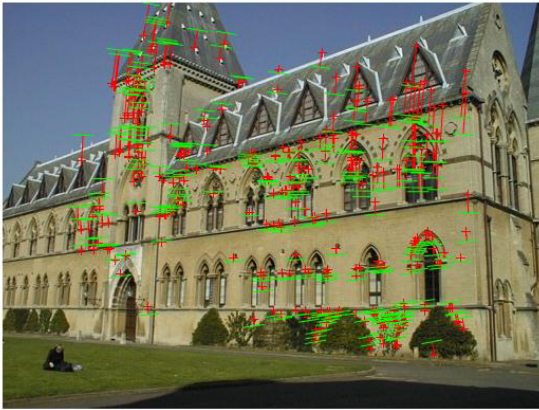


Fundamental Matrix Estimation (Part 2)

a.

	Residual (Normalized)	Residual (Un-normalized)
House	14.5839	26.7532
Library	10.8974	11.8459





b.

	Residual of Inliers	No. of Inliers
House	14.5839	156
Library	10.8974	293

c.

