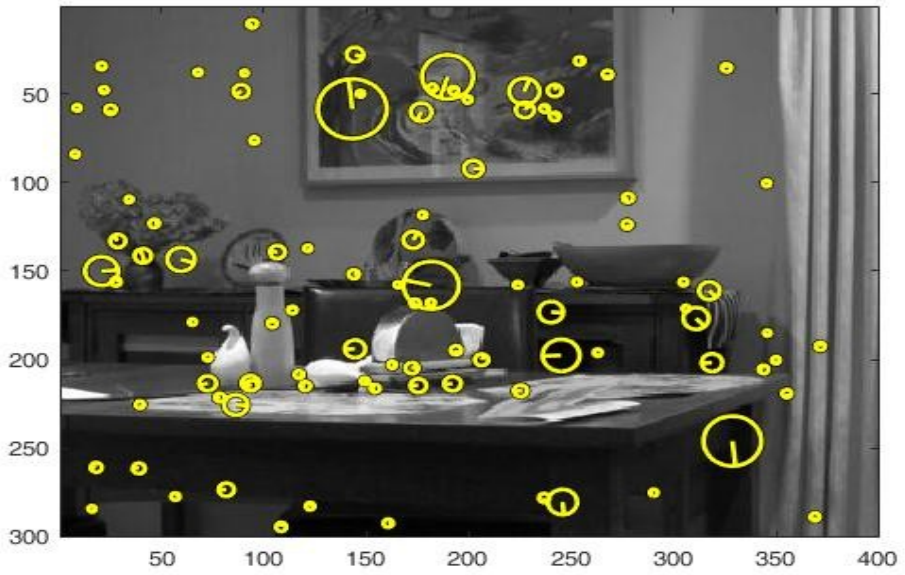
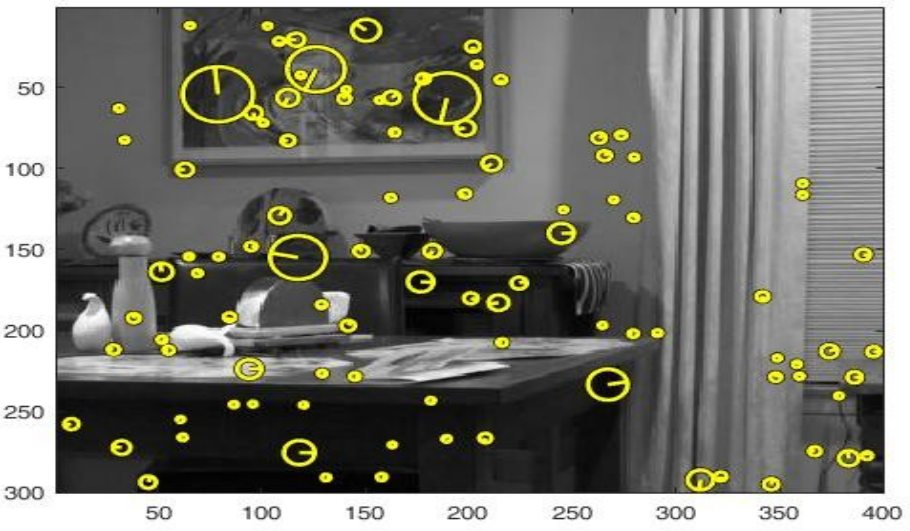
INPUT IMAGES TO BE STITCHED

COMPUTE SIFT FEATURES

SIFT FEATURES OF INPUT IMAGES





The SIFT feature descriptor gives out different output every time you run it , due to some random combinations involved during the processing and also depends on the number of features you want to detect. Mostly the features of the white square with black background are identified as corners even after changing the parameters. The SIFT can be applied to only Grayscale images with Single precision , hence all the input images should be converted to that format.

FIND THE BEST SIFT FEATURE MATCHES BETWEEN TWO IMAGES

The best matching points are shown below

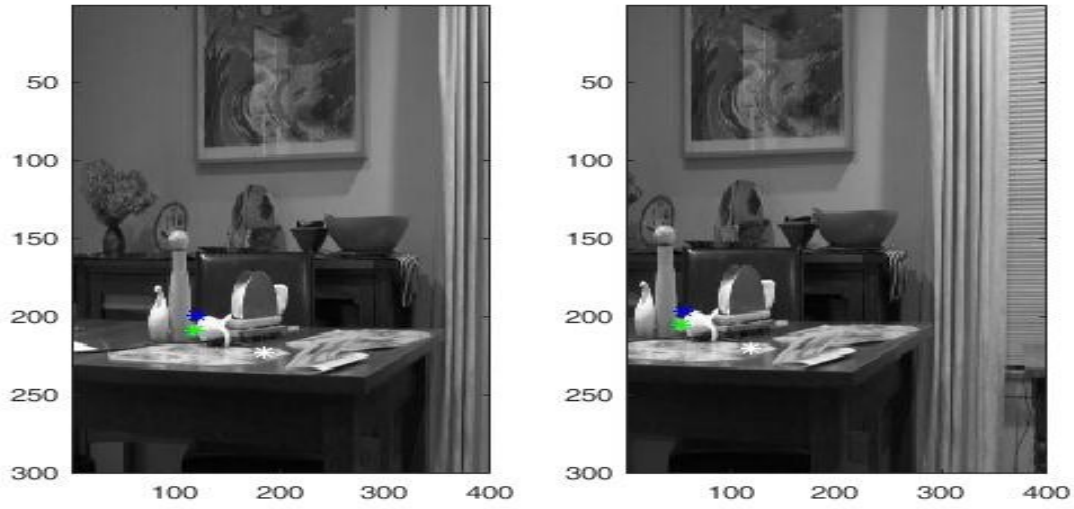
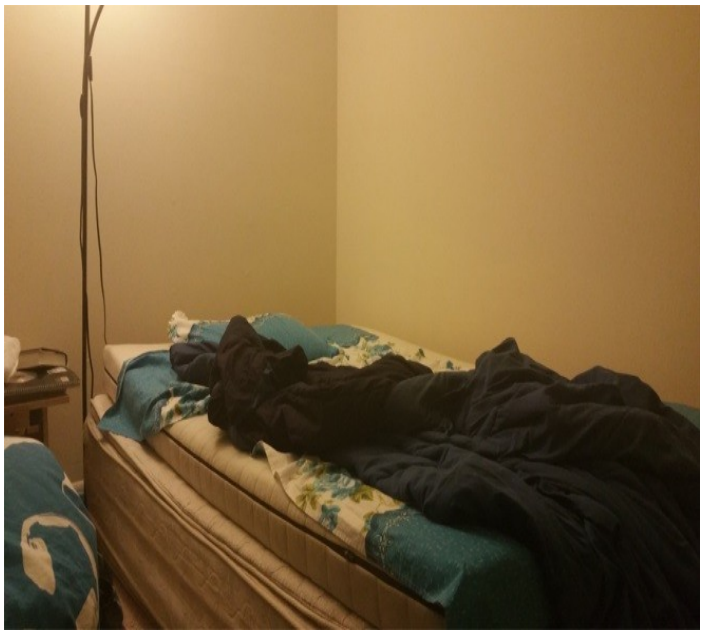
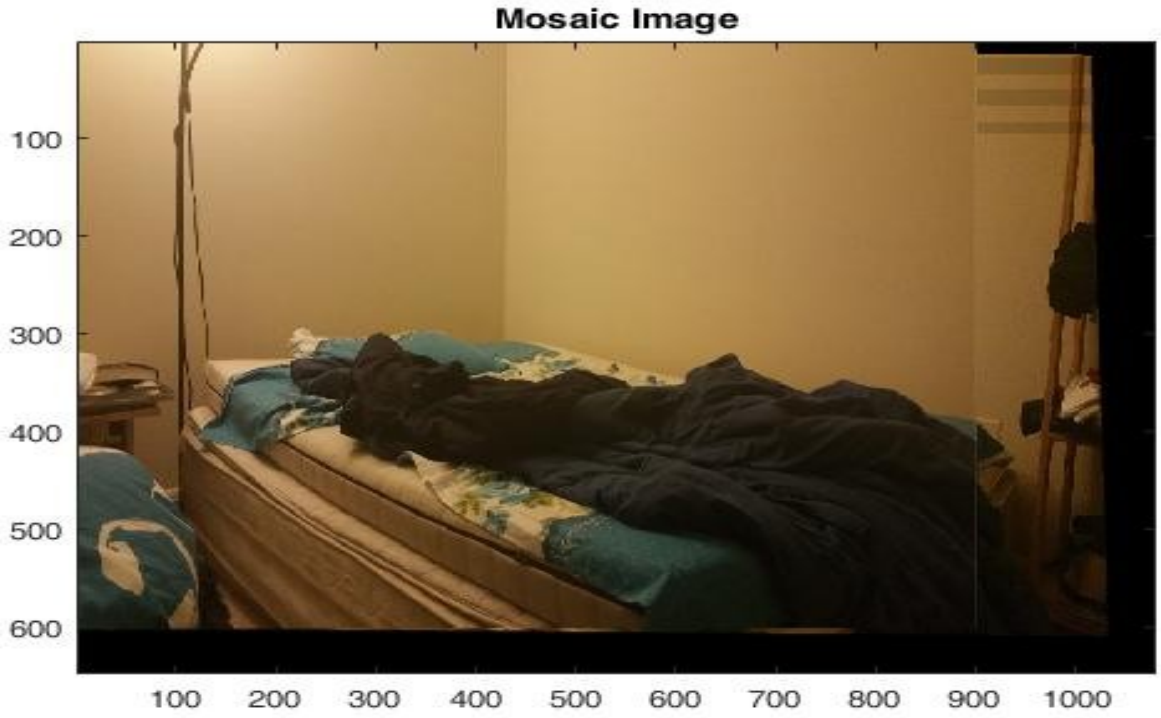


IMAGE STITCHING BY COMPUTING AFFINE TRANSFORMATION BETWEEN TWO IMAGES USING RANSAC

INPUT IMAGE SET 2



MOSAIC OF INPUT IMAGE SET 2



INPUT IMAGE SET 3

MOSAIC OF INPUT IMAGE SET 3

MULTIPLE IMAGE STITCHING

Input Images

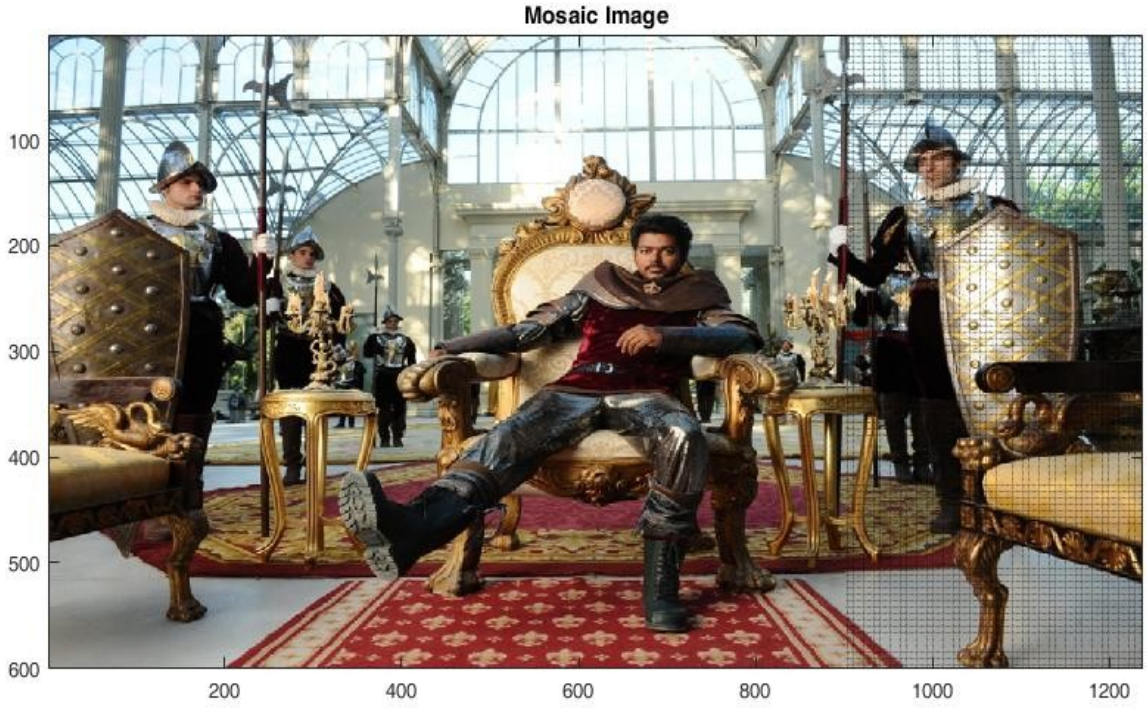
RESIZE IMAGES OF DIFFERENT SIZES USING BILINEAR INTERPOLATION

INPUT IMAGES

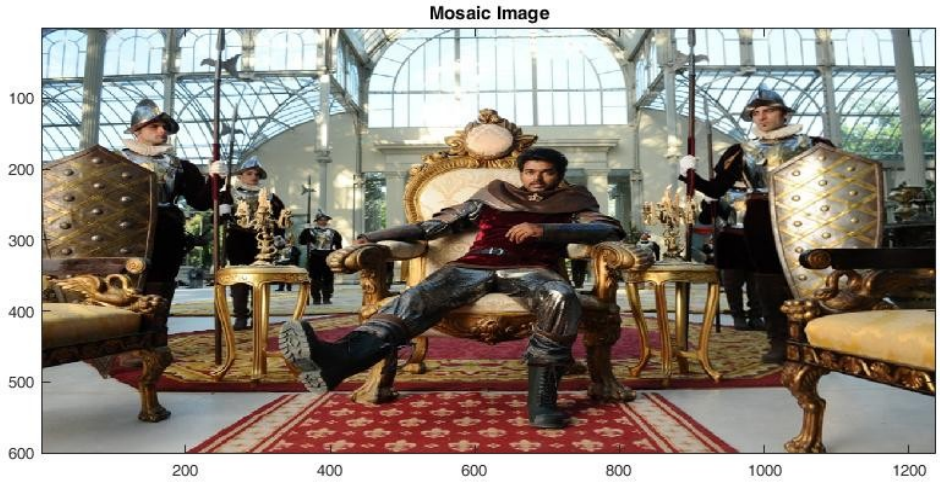
Left Image size : 900 * 600

Right Image Size : 750 * 500

MOSAIC WITHOUT BILINEAR INTERPOLATION



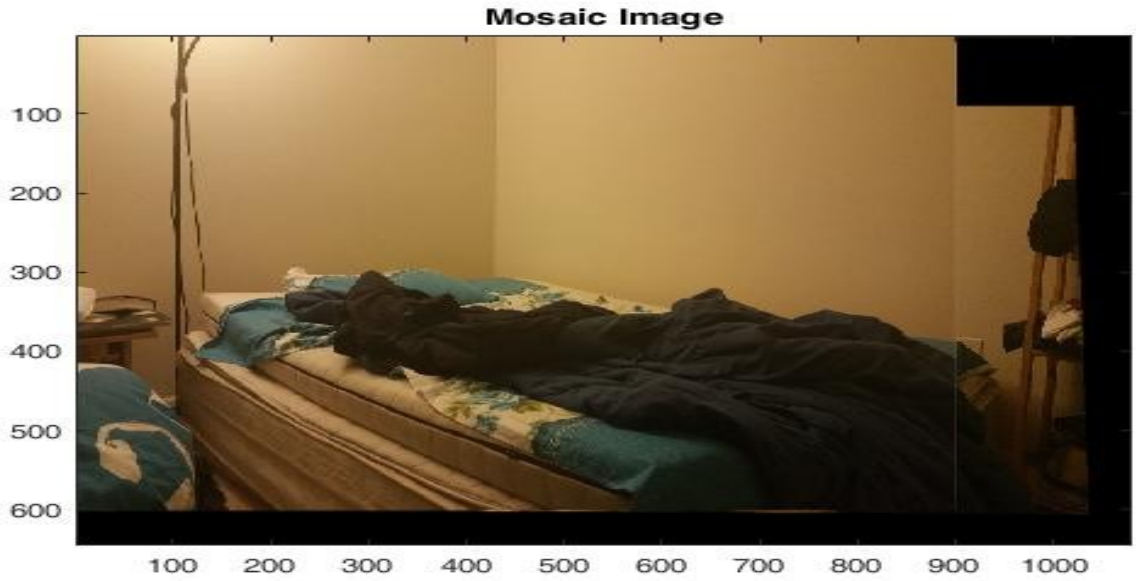
MOSAIC WITH BILINEAR INTERPOLATION



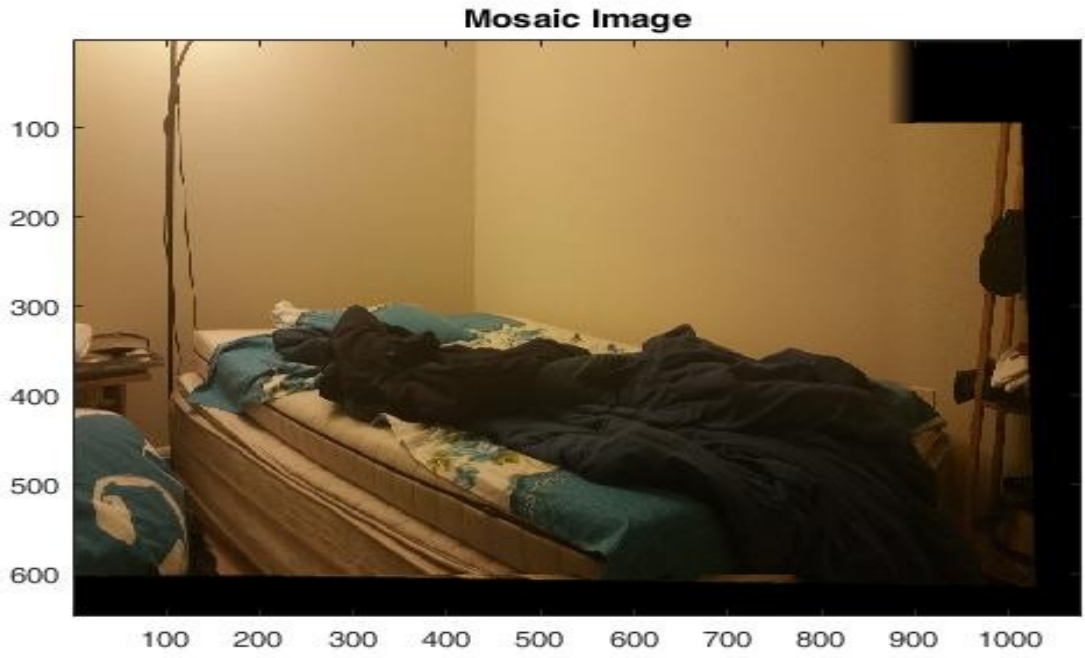
NORMALIZATION OF EXPOSURE VARIATION

In order to eliminate exposure varying line between the images , a feathering approach with varying weight function is used. What does this is, in the blended region , a varying weighted average, of the two images to be combined, is taken.

UNFEATHERED MOSAIC

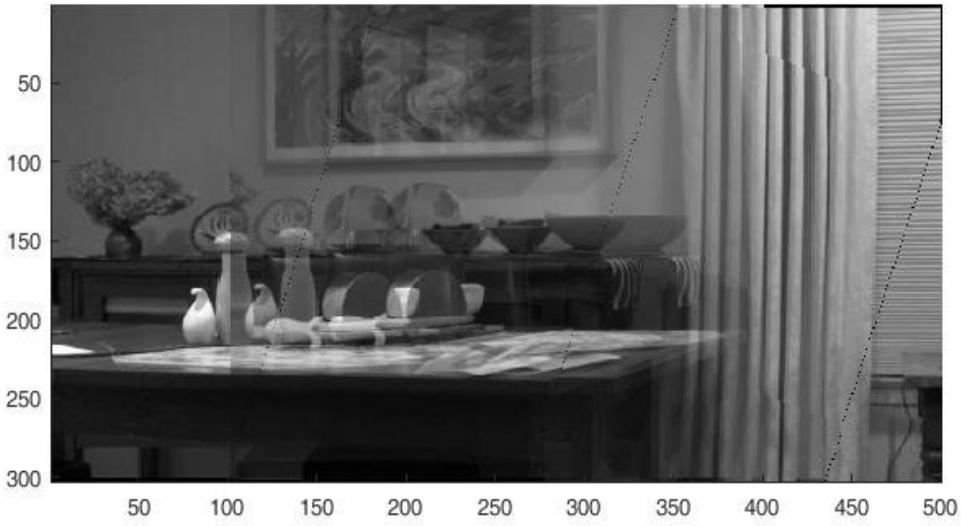


FEATHERED MOSAIC



REMOVAL OF GHOSTING

AVERAGING OF OVERLAPPING PIXELS



Using pixels of only one image for overlapping pixels and implementing a box filter for black points

As noticed in the images above, in the areas of overlap, in order to prevent ghosting, only pixels from one of the images is used. This effectively removes ghosting. Also the black dotted lines have been eliminated by using a box filter for black points.