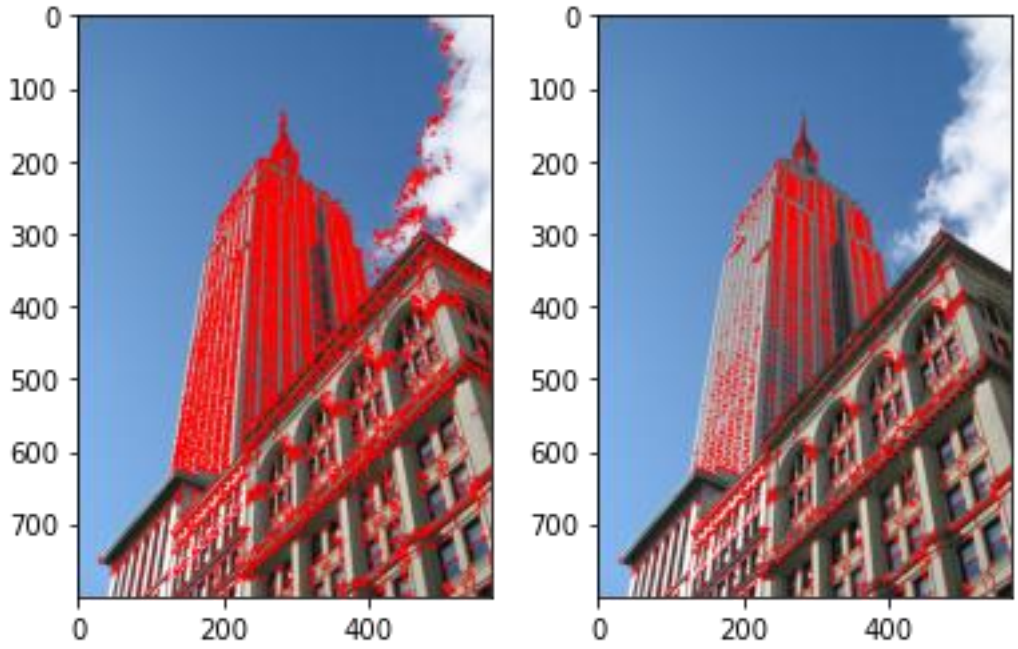
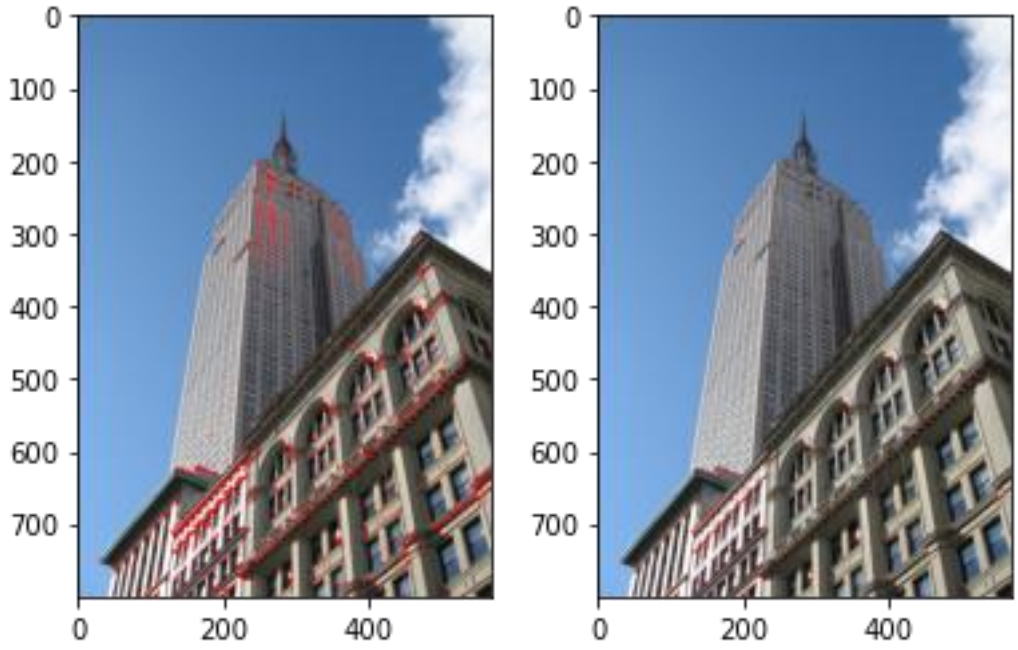
SIT 789: Image descriptors and feature detectors: Harris corner detector, SIFT

Task 1:



(a) (b)



(c) (d)

Fig 1: *a)* ***87282*** *Corners with threshold* ***1000*** *b)* ***39280*** *Corners with threshold* ***94003.416***

c) ***10896*** *Corners with threshold* ***940034.16*** *d)* ***2276*** *Corners with threshold* ***4700170.8***

This shows that as threshold is increased the number of Corners detected goes down.

Task 2:

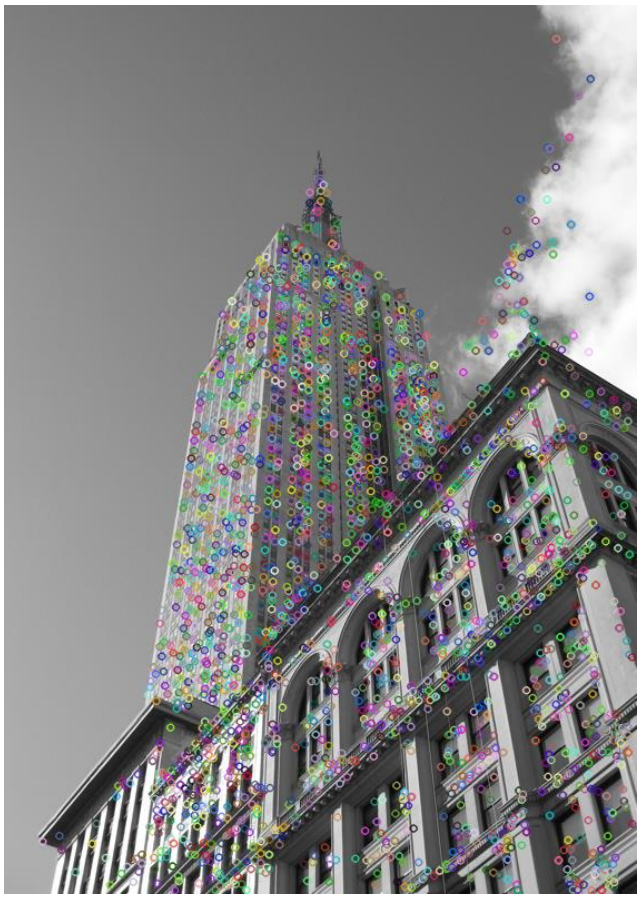


Fig 2: *Image with SIFT Keypoints*

- H_des_des_45: 400.4697241989711
- H_des_des_zoomedout: 401.33651715237676
- H_des_des_another: 433.89630097524457

We can see that the distance between same images (both zoomed out and rotated at 45 degrees) is lesser than the difference from another image. This shows how SIFT can be used to differentiate two images which are different and compare two images which are same but have different scale.

The distance between des and des_45 is the smallest distance and des and des_zoomedout is the 2nd smallest whereas des and des_another is the largest. This is the expected the result, as similar images have smaller distances than different images.