

Name : Aadesh Surendra Varude
Week 4 Lab Report

Part A

1) Rotation by 10 degrees



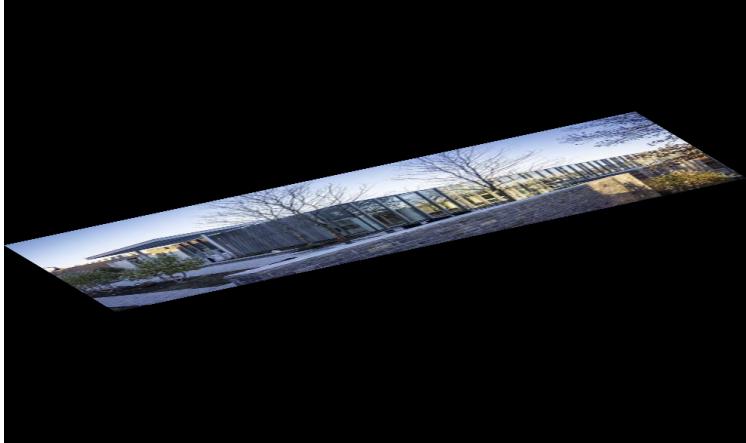
2) Scale up (+20%)



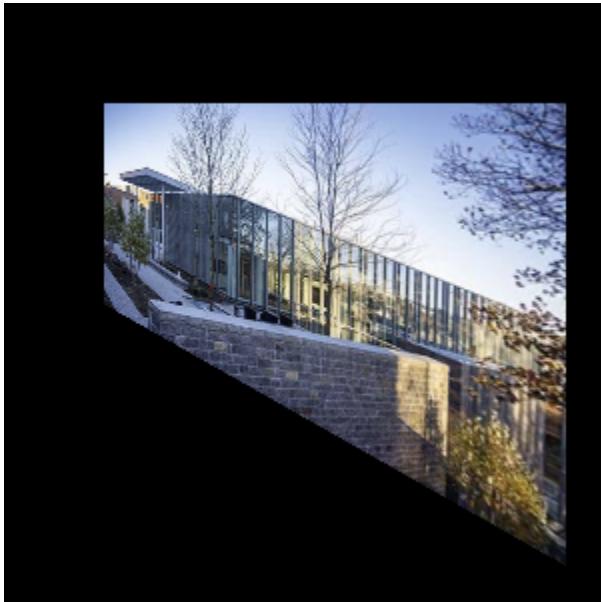
3) Scale down (-20%)



4) Affine transformation



5) Perspective transformation



Harris Corners for
Original Image:



1) Rotation by 10 degrees



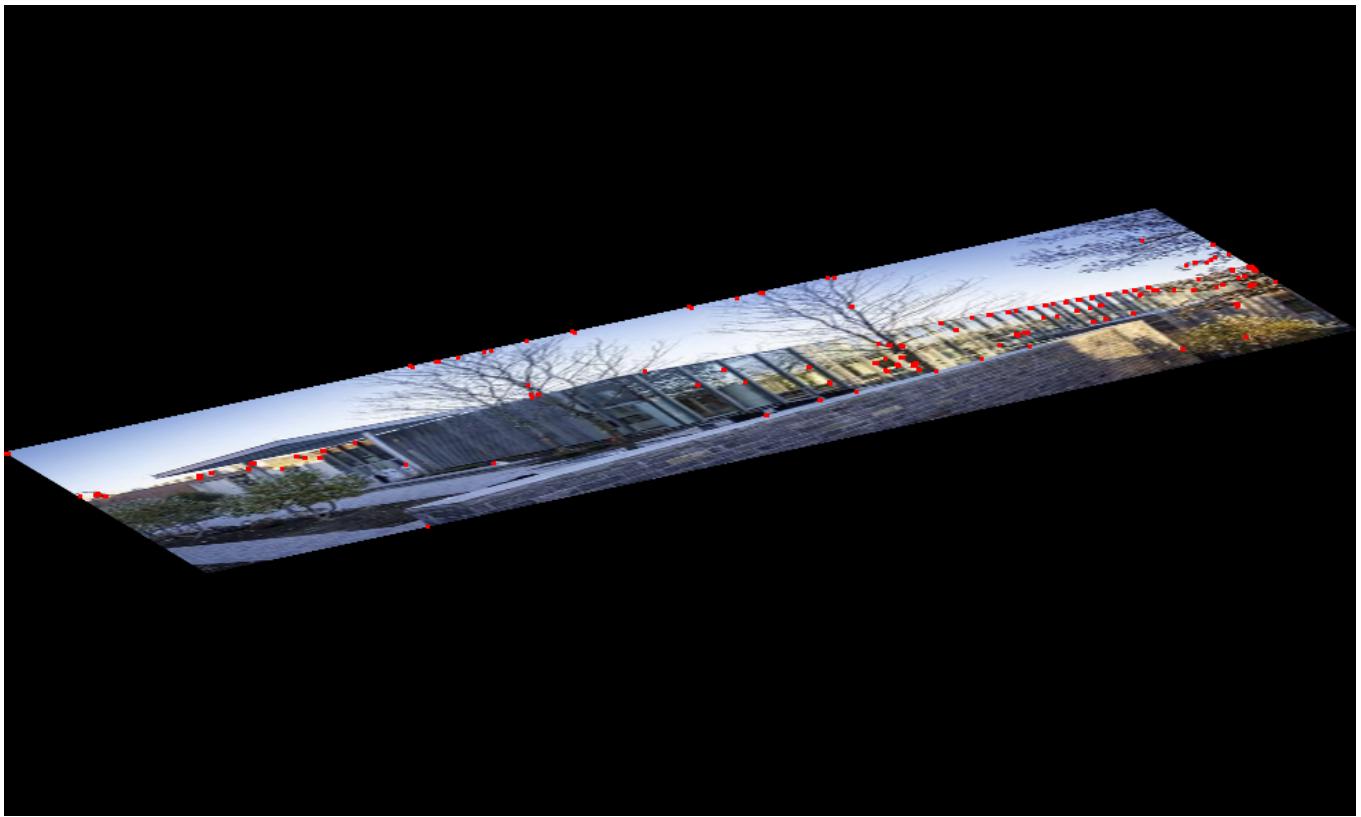
2) Scale up (+20%)



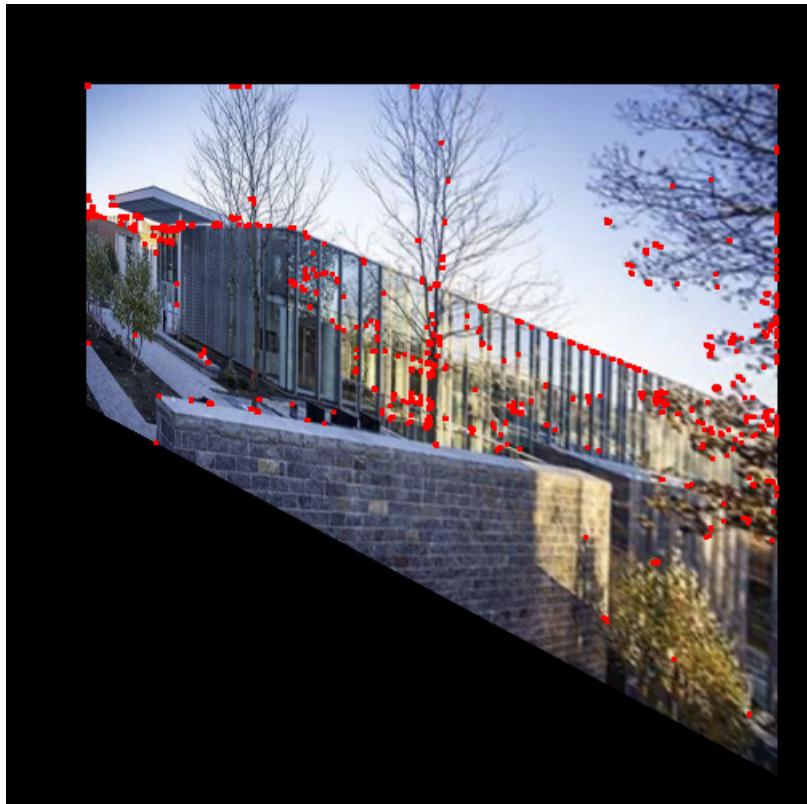
3) Scale down (-20%)



4) Affine transformation



5) Perspective transformation



Sift

Original Image:



1) Rotation by 10 degrees



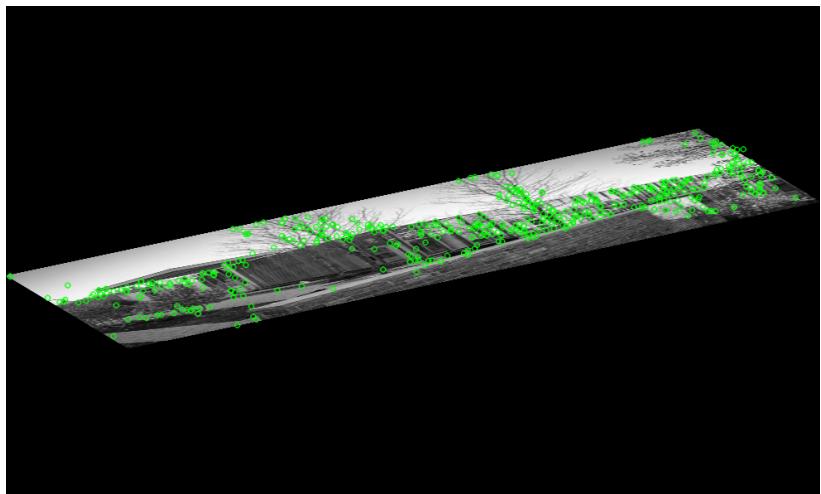
2) Scale up (+20%)



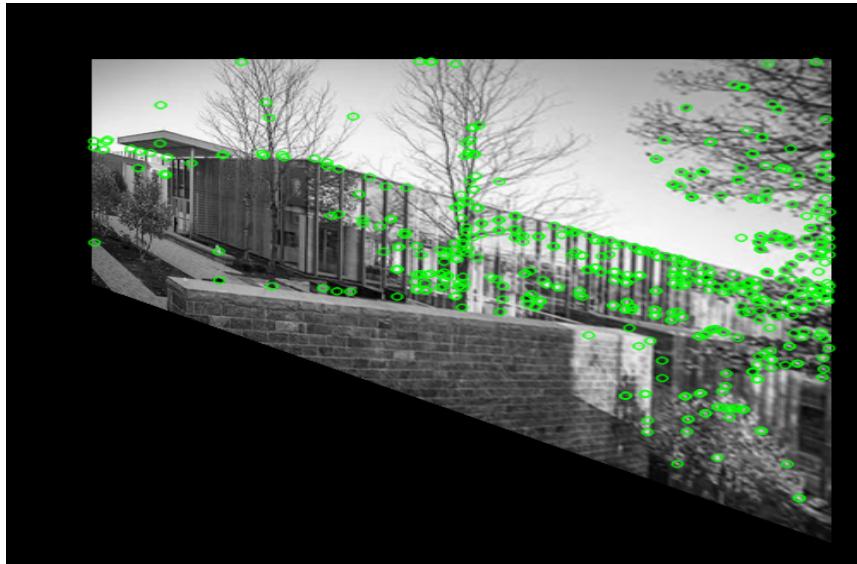
3) Scale down (-20%)



4) Affine transformation



5) Perspective transformation



Observations:

For the Scale the Harris corner and the Sift features do perform decently in our case but it might happen so that due to large up scaling or down scaling corners will not remain corners and the harris corner will fail whereas the sift features would still be effective and robust.

The example for this could be seen in the video recording for the bonus section. Wherein I zoom the book and one can observe that the harris corner reduce whereas Sift features are still reliable.

For the Rotation, Affine and Perspective transforms we can see that the Harris corner either reduces the number of corners detected or detects wrong corners, some corners are also missing in the image.

Whereas the Sift feature are scale and transformation invariant even in rotation, Affine and Perspective transforms the Sift Features detected are still intact.