CS4363/5363 Computer Vision
Spring 2021
Feature Matching

1. Find and display the ORB descriptors of two input images.

2. Use the Brute Force matcher to find the descriptor matches.

3. Display the first 20 descriptor matches and determine, visually, how many of them are correct.

4. Repeat the previous question, but now sort the matches by distance prior to displaying.

5. Compute a homography from the matches from questions 3. Display the condition number and determinant of the homography.

6. Repeat the previous question, but now use the homography computed from the matches of question 4.

7. Write the function matches_erros(pts1, pts2, H) that receives the arrays of matching points pts1 and pts2, and the homography matrix H, and returns the mean squared error of the projection of pts1 to pts2 using H.

8. Find the set of consistent matches using RANSAC.

Note: 50% of your grade will be assigned based on your effort during the class, evidenced by submitting progress reports, asking questions, and participating in discussions. The rest will be assigned based on your submission by the deadline.