

### Homework 3 - report

**(A)** Describe your solutions, any interesting parameters or implementation choices for feature extraction, putative matching etc.

Sol :

According to the given instructions, the Sift detector has been used in the code to retrieve the key-points/ standard landmarks and the descriptors. Using `spicy.spatial.distance.cdist()` function, with euclidean metric, the pairwise distance is calculated and considering the top 180 pairs having minimum distance, ransack loop is ran for 3000 iterations to get precise homography fitting. 4 inliers are selected and based on the positions of those inliers and the homography matrix the residual inlier values are calculated with rest of the 176 inliers and are appended to the residual list. Iterating it for the four inlier points the optimal homography matrix is calculated.

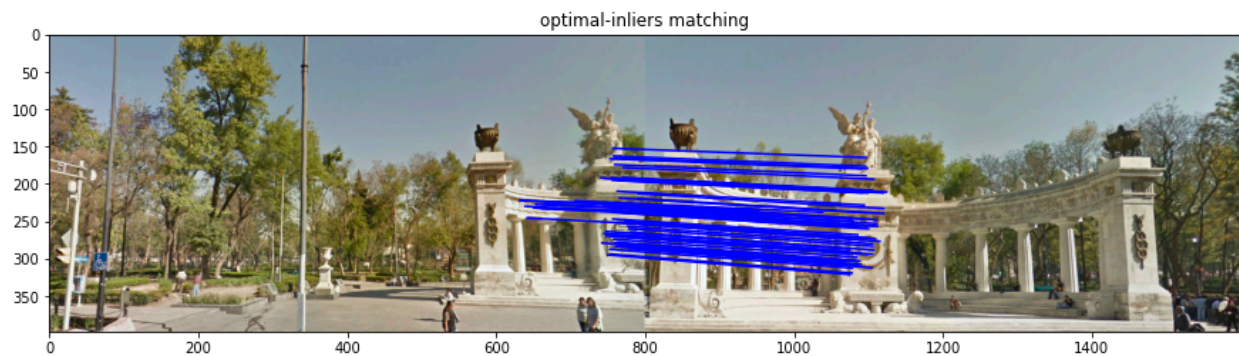
**(B)** For the image pair provided, report the number of homography inliers and the average residual for the inliers. Also display the locations of inviter matches of both the images.

Sol:

Inlier count: 65

Residual avg: 1.245095440060881

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[103, 92, 120, 156, 101, 61, 165, 143, 152, 154, 148,
144, 121, 150, 110, 105, 142, 106, 178, 159, 97, 124,
113, 171, 116, 126, 122, 69, 127, 169, 138, 162, 136,
164, 131, 153, 94, 168, 133, 132, 139, 118, 130, 128,
175, 60, 149, 111, 114, 176, 112, 109, 158, 163, 160,
135, 146, 75, 137, 115, 85, 179, 99, 166, 119]
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**(C)**

