

0, Required packages:
conda install shapely (Must use conda. The command “pip install shapely” does not work)
pip install scikit-spatial

1, Running time:
t1 : 00:01:40 (hh-mm-ss)
t2: 00:04:30

2, Q1: stitch_background

2.1, Process:
Padding img1
sift.detectAndCompute -> keypoints2, descriptors2

SSD + ratio test + top 15 -> match_pairs

cv2.findHomography
cv2.warpPerspective(img2) -> warped_img2
Warped_img[corresponding zone] = original_img1

3, Q2: multi stitch

3.1, Process:
3.1.1, Compute overlap matrix:
For img_i and img_j, if overlap_percentage > 0.15, think they are overlapped.
Use cv2.perspectiveTransform to find corresponding area, then compute overlap_percentage.

3.1.2, Find the stitching order

Add img_i into the queue if there is a img_j in queue which is overlapped with img_i.
The order will look like [0,1,3,2] which means we firstly combine img_0 and img_1, then we combine img_01 and img_3.

3.1.3, Combine these imgs by the stitching order.
The combine function is same with Q1_stitch_background