Planar Homographies and Images Mosaicing

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The goal of this practical session is to estimate planar homographies between different views of a scene and to automatically stich the images into a mosaic or panorama.

Question 1:

Answer: In given code, we are performing the functions manually. The code is

The above shown figure is the result using the Code Provided

well documented and commented in such a way that it is very well understandable.

Question 2:

Answer: The Concept is Read the folder containing images. Then keep the first image as the reference image and then add the second image to the first image then assume the result as the one image (first image) then consider the third image as the second image and add it to the result image and continue this process until the last image.

Code:

First, reading all the images from a directory, then using the first image as a reference image.

Then running a loop from second image till the end of the number of images. Then detecting the features using SURF or MSER, then extracting the features from the obtained points and the concerned image. Then matching the features.

By using the matching features, we get the x and y co-ordinates. Using these coordinates, homography matrix is computed. Then, by using vgg_WARP_H function, two images are combined and stored in the first image. Then again the

loop is executed for the third image considering that as the second image and the result image as the first image, run the process until the last image.

The above shown figure is the result using SURF

The above shown figure is the result using MSER.

Conclusions

There is not a big difference between the two Feature Extractors i.e. Surf and Mser. But there is a slight difference at the edges and we are getting more feature points compared to Mser in the Surf. But when I am considering more images the result is not so good.