Computer Vision CSE 463

Homework 2

Object Dedection with SIFT

İlkan Mert Okul, 1801042649

I used SIFT and Brute force matcher to dedect my object recognition.

Used objects:

Apple_1

Ball_1

Banana_1

Cap_1

Flashlight_1

Garlic_1

Lemon_1

Onion_1

Peach_1

Pear_1

Those objects have around 600 objects. I used 540 of them as train, and 60 of them test data.

Algorithm :

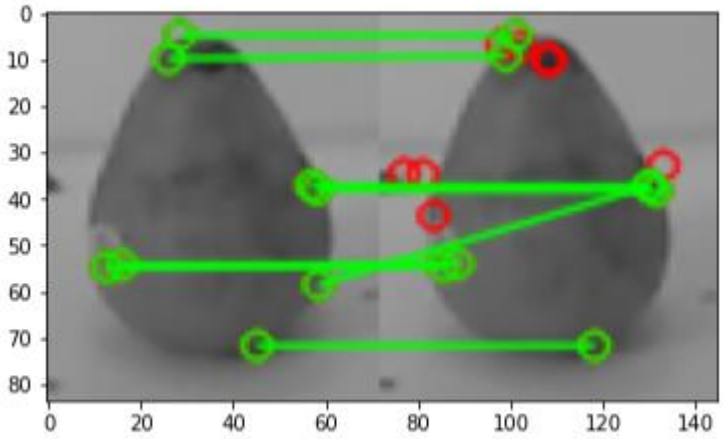
1- Get keypoints and descriptors from test image.
2- For each train image, get matches with test image, and store if matched or not. Count them to have a conculution.
3- After calculating all test images (60 of them), print the confision matrix.

def siftMatcher(img1, img2, draw):

This function gets img1 and img2 and returns true if object in img2 is recognized in img1.

You can enable printing matches by draw parameter to true.

```
if siftMatcher(img1,img2,True):
    print("dedected!")
```




```
dedected!
```

def siftProcedure (imgname, firstArray, secondArray, thirdArray):

This function gets image path and name, and sizes of categories of image folder.For example, images are named imagename_1_2_123.png. Arrays helps to get name of the images. This way, we can reach all images in the image folder.

This function returns the confision matrix to inform user.

```
siftProcedure("pear_1/pear_",[1],[1,2,4],[200,200,200])
```

```
This takes time.. Calculating i = 0 to 3
Calculating i= 0
Calculating i= 1
Calculating i= 2
[[57  3]
 [ 0  0]]
```

In pear_1, we have a 57/60 accuracy. You can see all results in the codefile, that is named 1801042649_sift.