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Hybrid Images

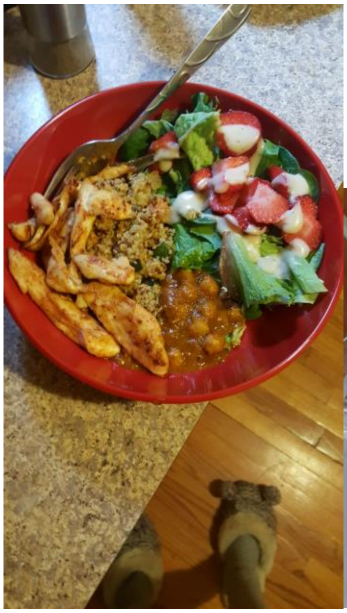
Introduction

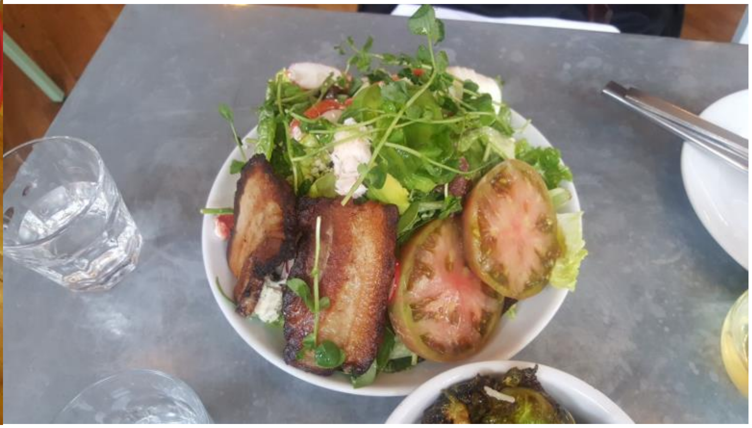
The following laboratory has the goal of introducing how to create Hybrid Images between two images. This is usually down by getting the low-pass information of one image, and the mixing it with the high-pass information of the other. For the result to be as clean as possible, the images must look a lot alike: Have the same dimensions and be correctly aligned just to name a few.

Materials

For the laboratory, I took 2 pictures that in my mind look alike, although there were not as obvious as the one used in the laboratory session. All of them are food related because who doesn't like food, right?

These are the two pictures:

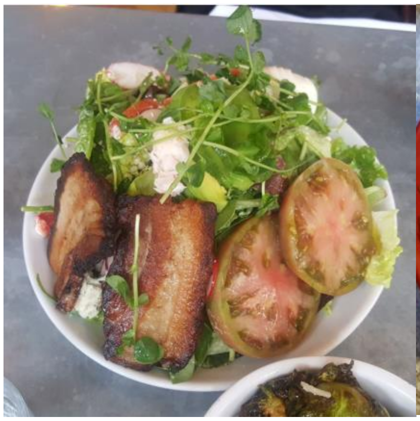


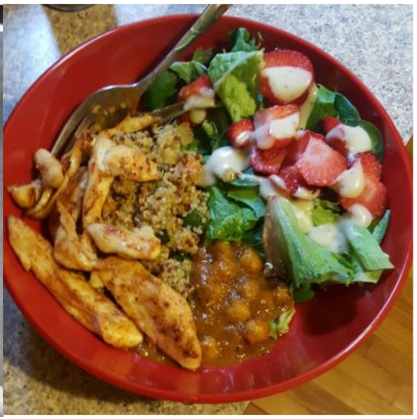


The picture on the left is a chana-masala bowl, while the one on the left is a salad with some chicken.

Methods

To make them more similar, I had to crop the picture on the left so It was only the bowl and did the same for the right picture. Later I had to aligned them and give them a similar dimension of 900x900

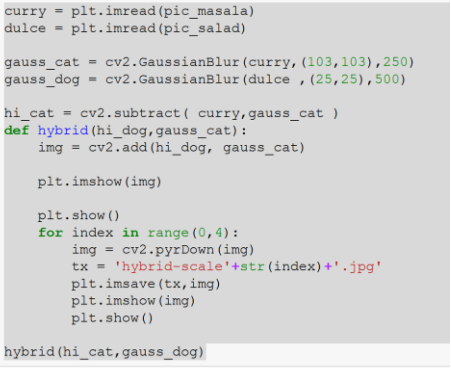




Afterwards I applied a Gaussian Blur to the left image with a window of 103 and a sigma of 250 so I can get the low pass information of the image. I did the same for the image of the right but with a window of 25 and a sigma of 500 to late subtract this image with the original one and get the high pass information.

When I had both the low pass image and the high pass image, I merge the two and created the hybrid image. See last page.

Code snippet:



```
curry = plt.imread(pic_masala)
dulce = plt.imread(pic_salad)

gauss_cat = cv2.GaussianBlur(curry,(103,103),250)
gauss_dog = cv2.GaussianBlur(dulce ,(25,25),500)

hi_cat = cv2.subtract( curry,gauss_cat )
def hybrid(hi_dog,gauss_cat):
    img = cv2.add(hi_dog, gauss_cat)

    plt.imshow(img)

    plt.show()
    for index in range(0,4):
        img = cv2.pyrDown(img)
        tx = 'hybrid-scale'+str(index)+'.jpg'
        plt.imsave(tx,img)
        plt.imshow(img)
        plt.show()

hybrid(hi_cat,gauss_dog)
```