

image-similarityMyNotebook

April 1, 2023

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[1]: from skimage.metrics import structural_similarity as ssim
import numpy as np
import cv2
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[2]: def mean_squred_error(image01, image02):
    error = np.sum((image01.astype("float") - image02.astype("float"))**2)
    error = error/float(image01.shape[0] * image02.shape[1])
    return error
def image_comparision(image01, image02):
    m = mean_squred_error(image01, image02)
    s = ssim(image01, image02)
    print("Mean Squared Error is {} \n Structural Similarity Index Measure is: \n
    ↪ {}".format(m, s))
```

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[3]: image01 = cv2.imread("cat.jpg")
image02 = cv2.imread("cat2.jpg")
```

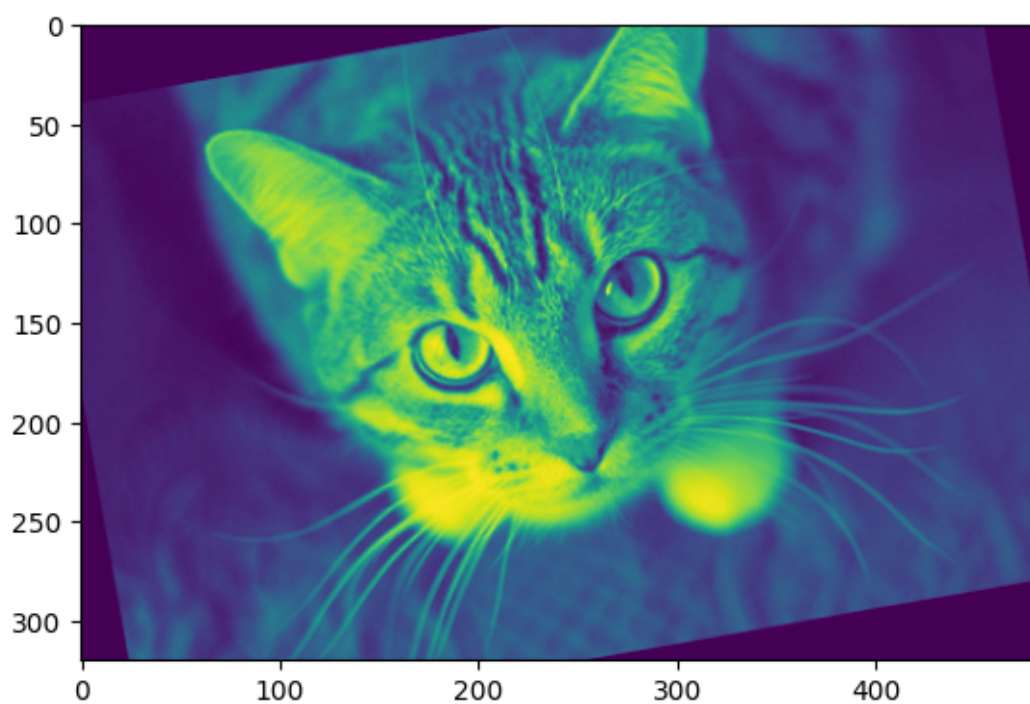
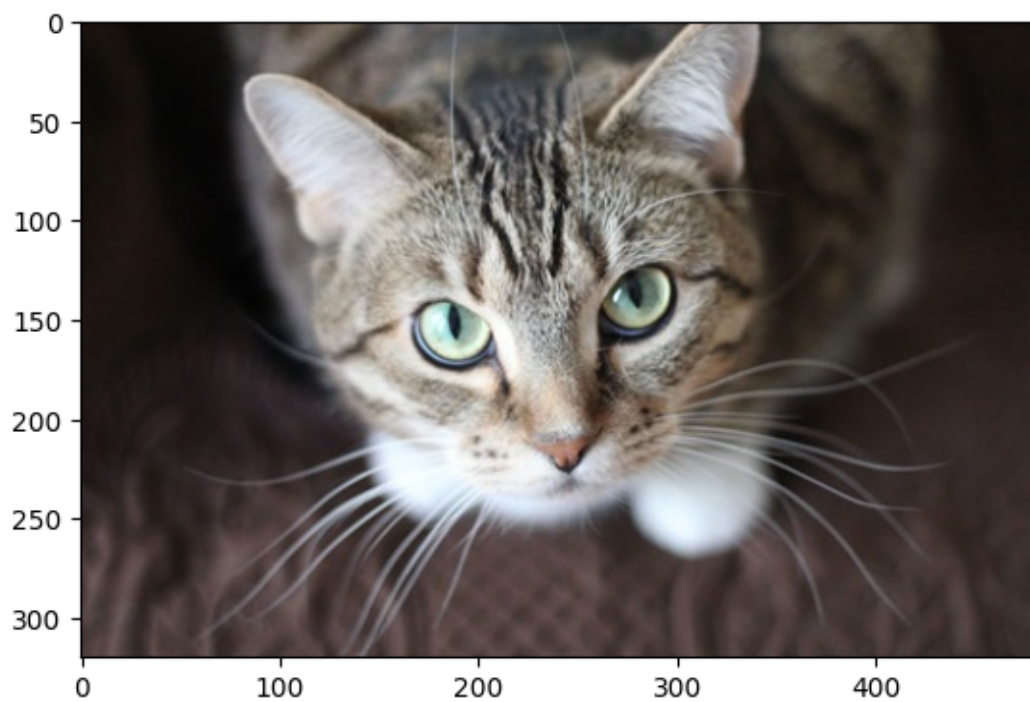
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[4]: image01 = cv2.cvtColor(image01, cv2.COLOR_BGR2GRAY)
image02 = cv2.cvtColor(image02, cv2.COLOR_BGR2GRAY)
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[5]: image_angle = 45
image_center = tuple(np.array(image02.shape[1::-1])/2)
image_rotation = cv2.getRotationMatrix2D(image_center, image_angle, 1.0)
imageWrap = cv2.warpAffine(image02, image_rotation, image02.shape[1::-1], flags=
    ↪ cv2.INTER_LINEAR)
```

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[6]: cv2.imwrite("../working/AugmentedImage.jpg", imageWrap)
```

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[6]: False
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[7]: import matplotlib.pyplot as plt
img = plt.imread("AugmentedImage.jpg")
img2 = plt.imread("cat2.jpg")
plt.imshow(img2)
plt.show()
plt.imshow(img)
plt.show()
```



```
[8]: img = cv2.imread("AugmentedImage.jpg")
img2 = cv2.imread("cat2.jpg")
image01 = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
image02 = cv2.cvtColor(img2, cv2.COLOR_BGR2GRAY)
image_comparision(image01, image02)
```

Mean Squared Error is 2237.761484375

Structural Similarity Index Measure is: 0.3666442233620015