Enhancing_Image_Dataset

August 19, 2020

0.0.1 This program is to perform data augmentation techniques for image dataset

```python
[1]: #load module

from shutil import copyfile
import cv2
import numpy as np
import glob, os
import re
```

```python
[2]: path = r'C:\Users\subys\CTS2R\Data\Raw\final'
if os.path.exists(path) == False :
    print("Error")
```

1 Blurring out the images

```python
[ ]: kernel1 = np.ones((5,5),np.uint8)
#erosion = cv2.erode(img,kernel,iterations = 1)
#dilation = cv2.dilate(img,kernel,iterations = 1)

Counter = 3
os.chdir(path)
kernel = np.ones((3,3),np.float32)/9
for file in glob.glob("*.jpg"):
    names = re.split('\.',file)
    dstFolNm = r'C:\Users\subys\CTS2R\Data\Raw\FramesBrCr'
    dstFileNm = names[0] + "_" + str(Counter) + "." + names[1]
    print(dstFileNm)
    img = cv2.imread(file, 1)
    #dst = cv2.filter2D(img,-1,kernel)
    #dst = cv2.dilate(img,kernel,iterations = 1)
    dst = cv2.erode(img,kernel,iterations = 1)
    #dst = cv2.bilateralFilter(img,9,75,75)
    cv2.imwrite(os.path.join(dstFolNm , dstFileNm), dst)
    #cv2.imwrite(dstFileNm ,dst)
```

```python
    #copy annotation file
    src= path + "\\" + names[0] + ".txt"
    dstfold = r'C:\Users\subys\CTS2R\Data\Raw\FramesBrCr'
    dstfile = names[0] + "_" + str(Counter) + ".txt"
    completeName = os.path.join(dstfold, dstfile)
    print("Copying", src)
    copyfile(src, completeName)
```

2 Increase or decrease brightness and contrast of the images

```python
[ ]: from PIL import Image,ImageEnhance

     kernel1 = np.ones((5,5),np.uint8)
     #erosion = cv2.erode(img,kernel,iterations = 1)
     #dilation = cv2.dilate(img,kernel,iterations = 1)

     Counter = 14
     os.chdir(path)
     kernel = np.ones((4,4),np.float32)/16
     for file in glob.glob("*.jpg"):
         names = re.split('\.',file)
         dstFolNm = r'C:\Users\subys\CTS2R\Data\Raw\FramesBrCr'
         dstFileNm = names[0] + "_" + str(Counter) + "." + names[1]
         print(dstFileNm)
         img = cv2.imread(file, 1)
         img=Image.open(file)

         #Contrast 1/1.5/2/2.5/3
         #img_contr_obj=ImageEnhance.Contrast(img)
         #factor=1.5
         #dst=img_contr_obj.enhance(factor)
         #dst.save(os.path.join(dstFolNm , dstFileNm))

         #Brightness 0.2/0.3/0.5/0.7/0.85/1.5/2/2.5/3/3.5
         img_brightness_obj=ImageEnhance.Brightness(img)
         enhancer = ImageEnhance.Brightness(img)
         dst = enhancer.enhance(4)
         dst.save(os.path.join(dstFolNm , dstFileNm))

         #copy annotation file
         src= path + "\\" + names[0] + ".txt"
         dstfold = r'C:\Users\subys\CTS2R\Data\Raw\FramesBrCr'
         dstfile = names[0] + "_" + str(Counter) + ".txt"
         completeName = os.path.join(dstfold, dstfile)
         print("Copying", src)
         copyfile(src, completeName)
```

[ ]: