5. Skin whitening

5.1. Skin whitening

OpenCV implements the function of skin whitening for images. The principle of implementation is basically the same as the principle of "1.20 OpenCV image brightness enhancement", but here we do not need to process the r value, just follow this formula, p = p(x)*1.4+ y, where p(x) represents the b channel or g channel, and y represents the value to be increased or decreased. Similarly, after adding the value, we need to judge the value.

5.2 Actual effect display

Source code path:

/home/pi/Rider-pi_class/4.Open Source CV/D.Image_Enhancement/05_Skin_Smoothing_and_Whitening.ipynb

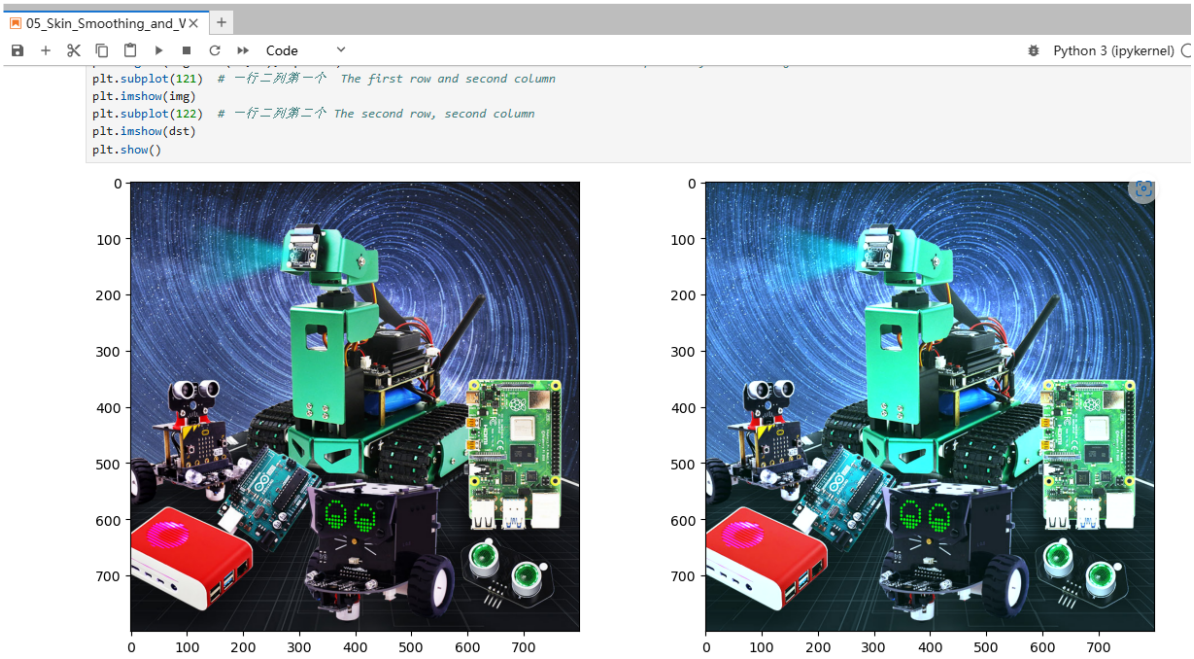
```
#图片的美白公式: p = P*1.4(a)+ b; Image whitening formula: p = P*1.4(a)+ b;
import cv2
import numpy as np
import matplotlib.pyplot as plt

img = cv2.imread('yahboom.jpg',1)
imgInfo = img.shape
height = imgInfo[0]
width = imgInfo[1]
#cv2.imshow('src',img)
dst = np.zeros((height,width,3),np.uint8)
for i in range(0,height):
    for j in range(0,width):
        (b,g,r) = img[i,j]
        bb = int(b*1.3) + 10
        gg = int(g*1.2) + 15

        if bb>255:
            bb = 255
        if gg>255:
            gg = 255

        dst[i,j] = (bb,gg,r)
# cv2.imshow('dst',dst)
# cv2.waitKey(0)
img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
dst = cv2.cvtColor(dst, cv2.COLOR_BGR2RGB)
plt.figure(figsize=(14, 6), dpi=100) #设置绘图区域的大小和像素 Set the size and
pixels of the drawing area
plt.subplot(121)  # 一行二列第一个  The first row and second column
```

```
plt.imshow(img)
plt.subplot(122)  # 一行二列第二个 The second row, second column
plt.imshow(dst)
plt.show()
```




```
import cv2
import matplotlib.pyplot as plt

img = cv2.imread('yahboom.jpg',1)
#cv2.imshow('src',img)
dst = cv2.bilateralFilter(img,15,35,35)
# cv2.imshow('dst',dst)
# cv2.waitKey(0)
img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
dst = cv2.cvtColor(dst, cv2.COLOR_BGR2RGB)
plt.figure(figsize=(14, 6), dpi=100) #设置绘图区域的大小和像素 Set the size and
pixels of the drawing area
plt.subplot(121)  # 一行二列第一个 The first row and second column
plt.imshow(img)
plt.subplot(122)  # 一行二列第二个 The second row, second column
plt.imshow(dst)
plt.show()
```

05_Skin_Smoothing_and_V

Code

Python 3 (ipykernel)

```
plt.show()
```