

## 5. OpenCV pixel operation

Pixel operation, we can change the pixel color at any position to a new one. Here we first read the image and then assign an area to white.

Code path:

```
~/jetcobot_ws/src/jetcobot_opencv/opencv_basic01_Getting_Started_with_OpenCV/04_
opencv_pixel_operation.ipynb
```

The main code is as follows:

```
import cv2

img = cv2.imread('yahboom.jpg',1)
(b,g,r) = img[100,100]
print(b,g,r)# bgr
#10 100 --- 110 100
i=j=0
for j in range(1,500):
    img[i,j] = (255,255,255)
    for i in range(1,500):
        img[i,j] = (255,255,255)
# cv2.imshow('image',img)
# cv2.waitKey(0) #1000 ms
```

```
#bgr8转jpeg格式
import enum
import cv2
def bgr8_to_jpeg(value, quality=75):
    return bytes(cv2.imencode('.jpg', value)[1])
```

JupyterLab shows the image comparison before and after:

```
import ipywidgets.widgets as widgets
image_widget1 = widgets.Image(format='jpg', )
image_widget2 = widgets.Image(format='jpg', )
# create a horizontal box container to place the image widget next to
eachother
image_container = widgets.HBox([image_widget1, image_widget2])
# display the container in this cell's output
display(image_container)
img1 = cv2.imread('yahboom.jpg',1)
image_widget1.value = bgr8_to_jpeg(img1) #original

image_widget2.value = bgr8_to_jpeg(img) #After pixel operation
```

After the code block is run, you can see that part of the second image has turned into white pixels.

