

Desktop/class.vision-master/ x 02-Grayscaleing - Jupyter Notebo x 01-reading-writing-and-displayir x 00-beginning - Jupyter Noteboo x +

localhost:8890/notebooks/Desktop/class.vision-master/01-reading-writing-and-displaying-images.ipynb

jupyter 01-reading-writing-and-displaying-images Last Checkpoint: 04/19/2023 (autosaved)

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File Edit View Insert Cell Kernel Widgets Help Trusted Python 3 (ipykernel)

In [1]: import cv2

In [2]: import numpy as np

Let's now load our first image

In [3]:

```
# We don't need to do this again, but it's a good habit
import cv2

# Load an image using 'imread' specifying the path to image
img = cv2.imread('./images/input.jpg')

# The first parameter will be title shown on image window
# The second parameter is the image variable
cv2.imshow('It is a cow!', img)

# 'waitKey' allows us to input information when a image window is open
# By leaving it blank it just waits for anykey to be pressed before
# continuing. By placing numbers (except 0), we can specify a delay for
# how long you keep the window open (time is in milliseconds here)
cv2.waitKey()

# This closes all open windows
# Failure to place this may cause your program to hang in some computers!
cv2.destroyAllWindows()
```

In [4]: # Same as above without the extraneous comments

خواندن، ذخیره کردن و نمایش تصویر با OpenCv

یا import بکج OpenCV شروع میکنیم.

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Scanned with CamScanner

Desktop/class.vision-master/

02-Grayscaleing - Jupyter Notebo

01-reading-writing-and-displayin

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Trusted Python 3 (ipykernel)

In [4]:

Same as above without the extraneous comments
import cv2
img = cv2.imread('./images/input.jpg')
cv2.imshow('It is a cow!', img)
cv2.waitKey(0)
cv2.destroyAllWindows()

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In [5]:

type(img)

Out[5]:

numpy.ndarray

In [6]:

print (img.shape)

(600, 800, 3)

نحوه ذخیره تصاویر در OpenCV

In [7]:

Let's print each dimension of the image
print ('Height of Image:', int(img.shape[0]), 'pixels')
print ('Width of Image: ', int(img.shape[1]), 'pixels')
Height of Image: 600 pixels
Width of Image: 800 pixels

shape ابعاد تصویر را نشان میدهد.
دو بعد نخست به ترتیب نشان دهندهی ارتفاع و عرض تصور می‌باشد. عدد 3 نیز نمایانگر وجود سه کانال رنگی است.

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OpenCV ذخیره سازی تصاویر در

8:43 AM

ENG

2/23/2023

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OpenCV ذخیره سازی تصاویر در

```
In [8]: # Simply use 'imwrite' specifying the file name and the image to be saved
cv2.imwrite('output.jpg', img)
cv2.imwrite('output.png', img)
```

Out[8]: True

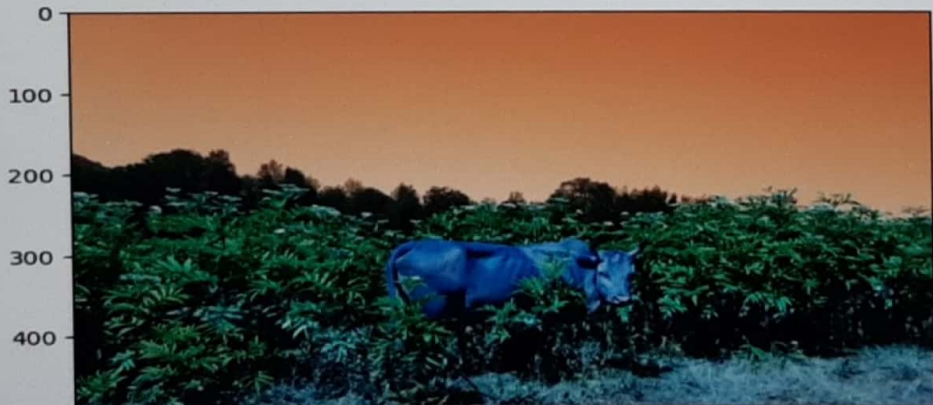
True به معنی این است که عملیات با موفقیت انجام شد.

matplotlib نمایش در نوت بوک با

```
In [9]: import matplotlib.pyplot as plt
```

```
In [10]: plt.imshow(img)
```

Out[10]: <matplotlib.image.AxesImage at 0xd91e3329e0>



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Run Code

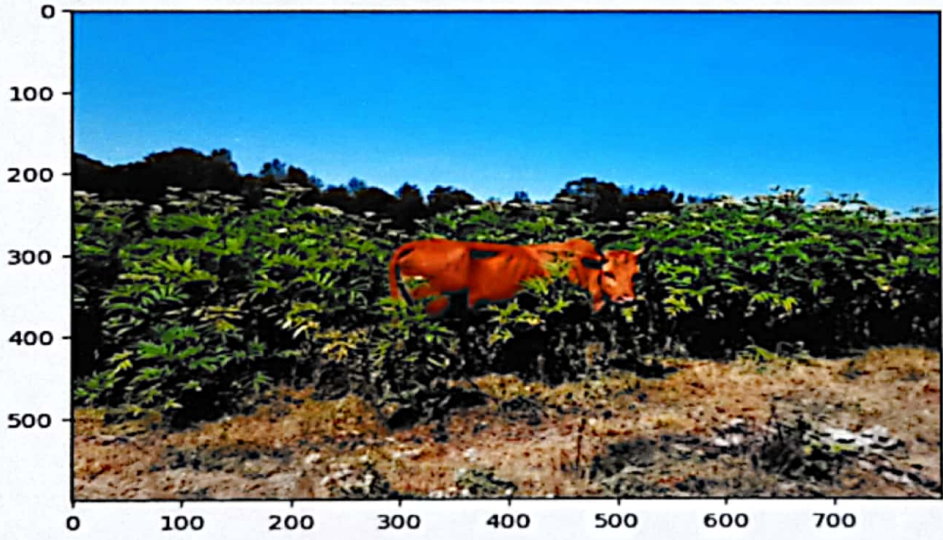
در واقع سطر و ستون های ماتریس به ترتیب height و width عکس هستند
رنگ تصویر وارونه است، چرا که ترتیب کانال ها در opencv برعکس اکثر سایر کتابخانه ها BGR است و نه RGB

تغییر ترتیب کانالهای رنگی (BGR-> RGB)

روش 1 : استفاده از numpy

```
In [11]: #method1  
plt.imshow(img[:,:,:-1])
```

Out[11]: <matplotlib.image.AxesImage at 0xd92072cee0>



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روش 2 : استفاده از OpenCV

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Trusted Python 3 (ipykernel)

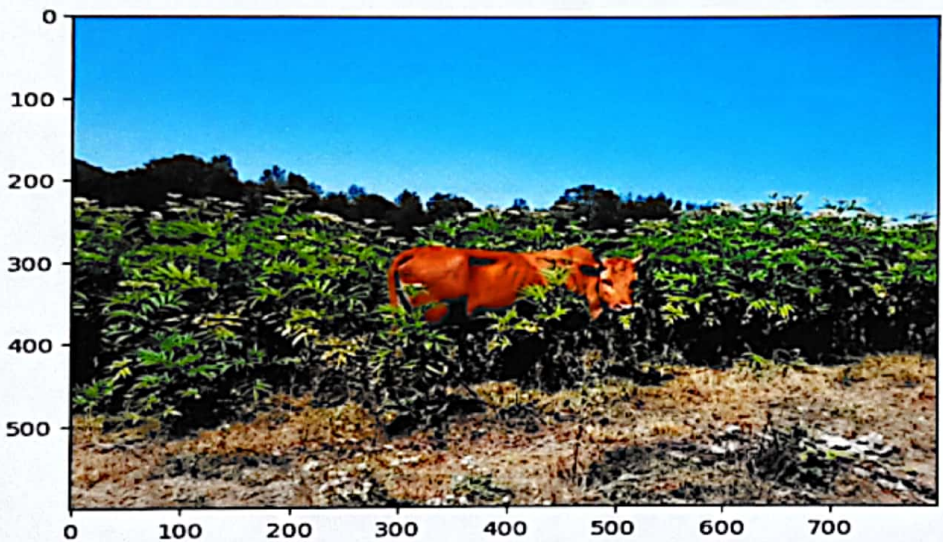
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Run Code

روش 2 : استفاده از OpenCV

```
In [12]: #method2
rgb_image = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
plt.imshow(rgb_image)
```

Out[12]: <matplotlib.image.AxesImage at 0xd920798ac0>



تغیر و دستکاری پیکسلها

```
In [13]: import cv2

img = cv2.imread('./images/input.jpg')
img[200:300, 300:500, :] = 255
```

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Friday, April 28, 2023

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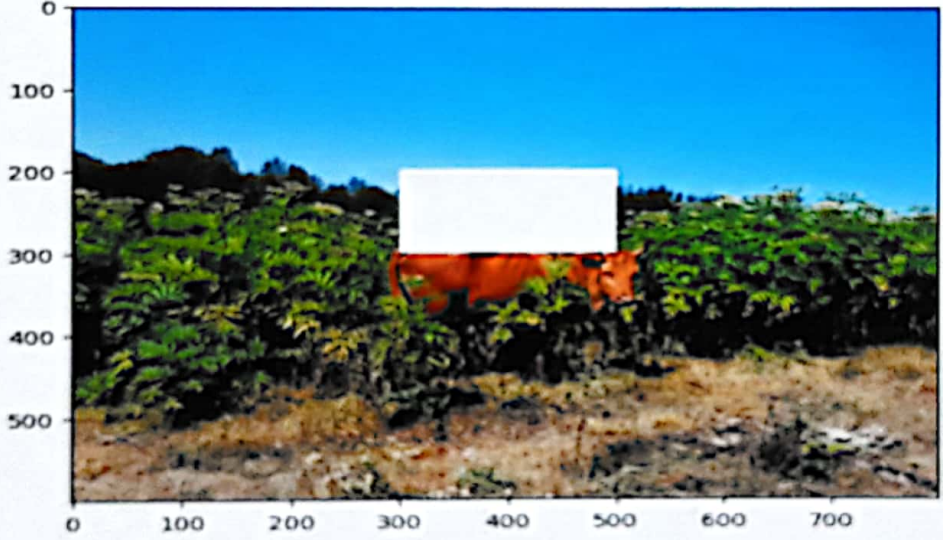
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تغیر و دستکاری پیکسلها

```
In [13]: import cv2

img = cv2.imread('./images/input.jpg')
img[200:300,300:500,:] = 255
plt.imshow(img[...,:-1])
```

Out[13]: <matplotlib.image.AxesImage at 0xd91e5fd330>



In [14]: img[200:300,300:500,:] = (0, 0, 255)
plt.imshow(img[...,:-1])

Out[14]: <matplotlib.image.AxesImage at 0xd91e66d6f0>

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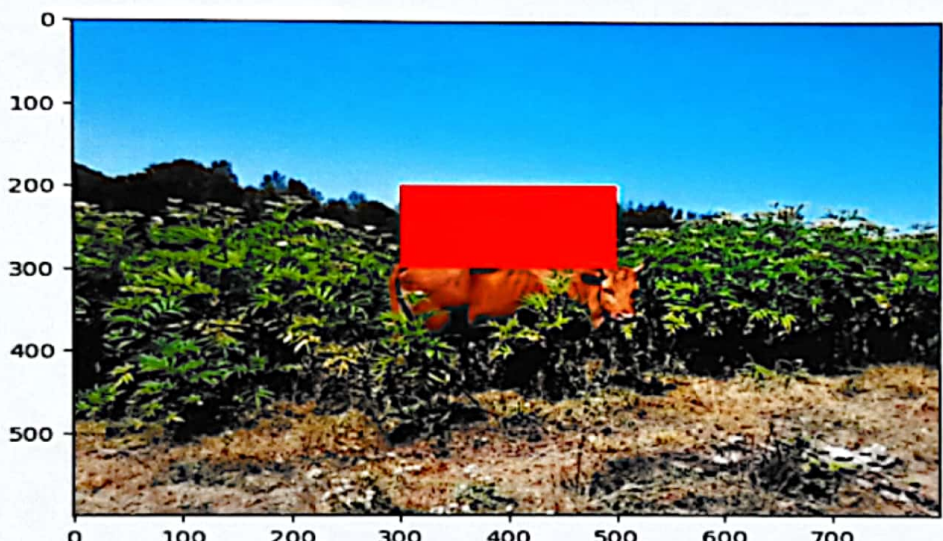
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In [14]: `img[200:300,300:500,:] = (0, 0, 255)`
`plt.imshow(img[...,:-1])`

Out[14]: `<matplotlib.image.AxesImage at 0xd91e66d6f0>`



In []:

In []:

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