```
**DAY 16**

25-06-2024

Topic
**OpenCV**
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```
pip install opencv-python
```

```
Requirement already satisfied: opencv-python in /usr/local/lib/python3.10/dist-packages (4.8.0.76)
Requirement already satisfied: numpy>=1.21.2 in /usr/local/lib/python3.10/dist-packages (from opencv-python) (1.25.2)
```

Reading and displaying an image

```
import cv2
from google.colab.patches  import cv2_imshow

image=cv2.imread('/content/friend.jpg')
cv2_imshow(image)
```

Convert the image to Grayscale

```
gray_image=cv2.cvtColor(image,cv2.COLOR_BGR2GRAY)
cv2_imshow(gray_image)
```

Save an Image

```
cv2.imwrite('new_image.jpg',gray_image)
```

```
True
```

Resize the Image

```
resize_image=cv2.resize(image,(500,400))
cv2.imwrite('resized_image.jpg',resize_image)
resize_image
```

ndarray (400, 500, 3) show data

Blur an Image

```
blurr_image=cv2.GaussianBlur(image,(9,9),0)
cv2_imshow(blurr_image)
```

Edge Detection

```
edge=cv2.Canny(gray_image, 100, 200)

# Display the edges
cv2_imshow(edge)
```

Draw Rectangle

```
image=cv2.imread('/content/friend.jpg')
# Draw a rectangle on the image
start_point = (150, 20)
end_point = (200, 100)
color = (0, 255, 0)  # BGR format
thickness = 2
cv2.rectangle(image, start_point, end_point, color, thickness)

# Display the image with the rectangle
cv2_imshow(image)
```

Write Text on Image

```
image=cv2.imread('/content/friend.jpg')
text = 'Hi!'
org = (25, 25)  # Bottom-left corner of the text
font = cv2.FONT_HERSHEY_SIMPLEX
font_scale = 1
color = (255, 0, 255)
thickness = 2
cv2.putText(image, text, org, font, font_scale, color, thickness)

# Display the image with the text
cv2_imshow(image)
```