

LETSGROWMORE DATA SCIENCE

IMAGE TO PENCIL SKETCH

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TASK - 4

```
In [3]: import cv2
import matplotlib.pyplot as plt
import numpy as np
plt.style.use('seaborn')
```

Loading and Plotting Original Image

```
In [4]: img=cv2.imread('cat.jpg')
img=cv2.cvtColor(img,cv2.COLOR_BGR2RGB)
```

```
plt.figure(figsize=(8,8))
plt.axis("off")
plt.title("Original Image")
plt.imshow(img)
```

Out[4]: <matplotlib.image.AxesImage at 0x21071e7ffd0>



Converting Original Image to GrayScale

```
In [5]: img_gray=cv2.cvtColor(img,cv2.COLOR_RGB2GRAY)
plt.figure(figsize=(8,8))
plt.axis("off")
plt.imshow(img_gray)
plt.title("GrayScale Image")
plt.show()
```



Inverting the Image

```
In [6]: img_invert=255-img_gray
plt.figure(figsize=(8,8))
plt.axis("off")
plt.imshow(img_invert)
plt.title("Inverted Image")
plt.show()
```



Smoothing the Image

```
In [7]: blurred_image=cv2.GaussianBlur(img_invert, (21,21), 0)
inv_blurred=255-blurred_image
plt.figure(figsize=(8,8))
plt.axis("off")
plt.imshow(inv_blurred)
plt.title("Smoothen Image")
plt.show()
```



Converting Image to Pencil Sketch

```
In [8]: img_sketch=cv2.divide(img_gray, inv_blurred , scale=255)
plt.figure(figsize=(8,8))

#Here we are sharpening the image obtained.

kernel=np.array([[ -1, -1, -1],
                  [ -1,  9, -1],
                  [ -1, -1, -1]])

final_sketch=cv2.filter2D(img_sketch, -1, kernel)
plt.axis("off")
plt.imshow(final_sketch,cmap="gray")
plt.title("Final Sketch Image")
plt.show()
```



Displaying all the Images

```
In [9]: plt.figure(figsize=(20,20))
plt.subplot(1,5,1)
plt.imshow(img)
plt.axis("off")
plt.title("Original Image")
plt.subplot(1,5,2)
plt.imshow(img_gray)
plt.axis("off")
plt.title("GrayScale Image")
plt.subplot(1,5,3)
plt.imshow(img_invert)
plt.axis("off")
plt.title("Inverted Image")
plt.subplot(1,5,4)
plt.imshow(blurred_image)
plt.axis("off")
plt.title("Smoothen Image")
plt.subplot(1,5,5)
plt.imshow(final_sketch,cmap="gray")
plt.axis("off")
plt.title("Final Sketch Image")
plt.show()
```



In [] :