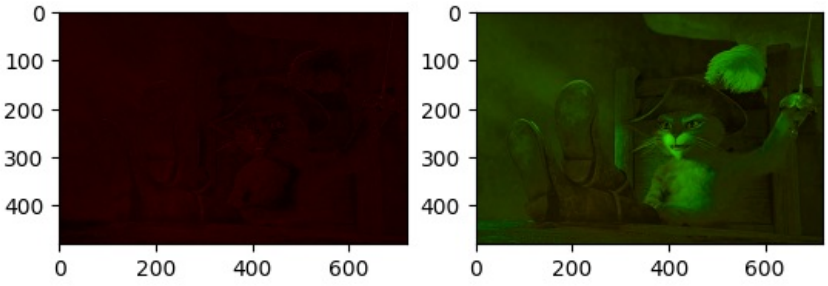
Assignment 6: Implement a program for feature extraction in 2D color images (any features like color, texture etc.) and to extract features from input image and plot histogram for the features.

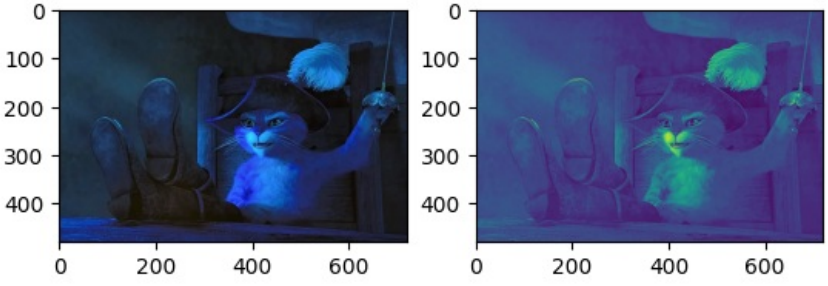
In [1]:
```
import cv2
import matplotlib.pyplot as plt
from skimage.color import rgb2gray
```

In [2]:
```
import cv2
import matplotlib.pyplot as plt

img = cv2.imread("/content/cat.jpg")   # Read image in BGR
img_rgb = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)  # Convert to RGB

plt.imshow(img_rgb)
plt.axis("off")   # optional: hide axes
plt.show()
```

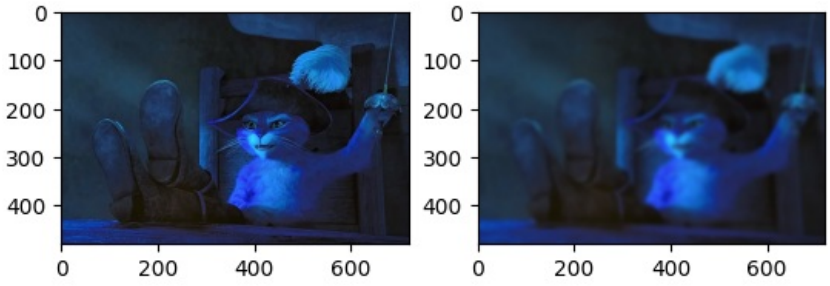
In [3]:
```
red, yellow = img.copy(), img.copy()
red[:, :, (1,2)] = 0
yellow[:, :, 2] = 0
f = plt.figure()
f.add_subplot(1,2, 1)
plt.imshow(red)
f.add_subplot(1,2, 2)
plt.imshow(yellow)
plt.show(block=True)
```



In [4]:
```
f = plt.figure()
f.add_subplot(1,2, 1)
plt.imshow(img)
f.add_subplot(1,2, 2)
plt.imshow(rgb2gray(img))
plt.show(block=True)
```



In [5]:
```
gimg = cv2.GaussianBlur(img,(105,105),cv2.BORDER_DEFAULT)
f = plt.figure()
f.add_subplot(1,2, 1)
plt.imshow(img)
f.add_subplot(1,2, 2)
plt.imshow(gimg)
plt.show(block=True)
```



In [6]:
```
histg = cv2.calcHist([img],[0],None,[256],[0,256])
plt.plot(histg)
```

Out[6]:
```
[<matplotlib.lines.Line2D at 0x7ea623f5c6e0>]
```