histogram

January 31, 2024

[ ]:
```
import cv2 as cv
import matplotlib.pyplot as plt
import numpy as np
```

[ ]:
```
img = cv.imread('Images/minion.jpg')
cv.imshow('Cat', img)
```

[ ]:
```
blank= np.zeros(img.shape[:2], dtype='uint8')
```

gray = cv.cvtColor(img, cv.COLOR_BGR2GRAY) .imshow('Gray', gray)

[ ]:
```
mask = cv.circle(blank, (img.shape[1]//2, img.shape[0]//2), 100, 255, -1)
```

[ ]:
```
masked = cv.bitwise_and(img, img, mask=mask)
cv.imshow('Mask', masked)
# Gray Histogram
""" gray_hist = cv.calcHist([gray], [0], mask, [256], [0,256])
```

[ ]:
```
plt.figure()
plt.title('Gray Scale Histogram')
plt.xlabel('Bins')
plt.ylabel('# of pixels')
plt.plot(gray_hist)
plt.xlim([0,256])
plt.show() """
```

Color Histogram

[ ]:
```
plt.figure()
plt.title('Color Histogram')
plt.xlabel('Bins')
plt.ylabel('# of pixels')
```

[ ]:
```
colors = ('b', 'g', 'r')
for i, col in enumerate(colors):
  hist = cv.calcHist([img], [i], None, [256], [0,256])
  plt.plot(hist, color=col)
  plt.xlim([0,256])
```

```
plt.show()
```

[ ]:
```
cv.waitKey(0)
```