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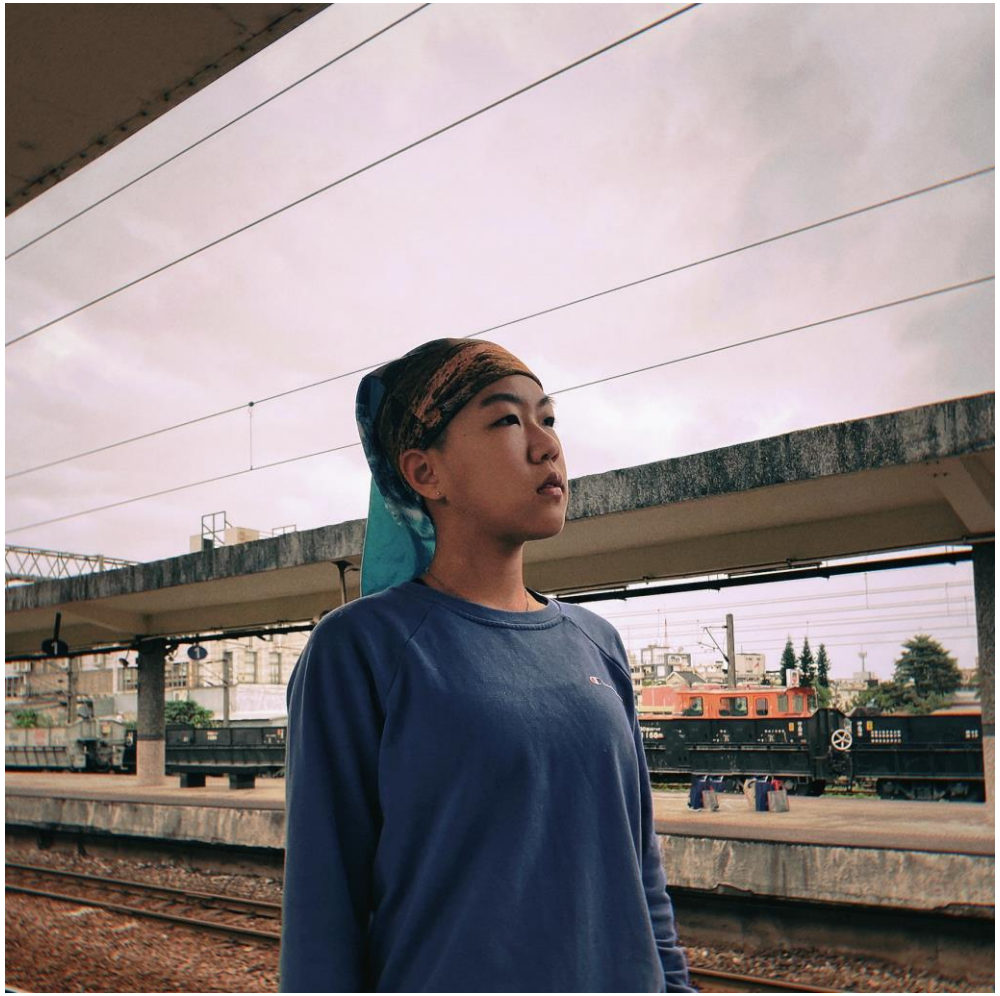
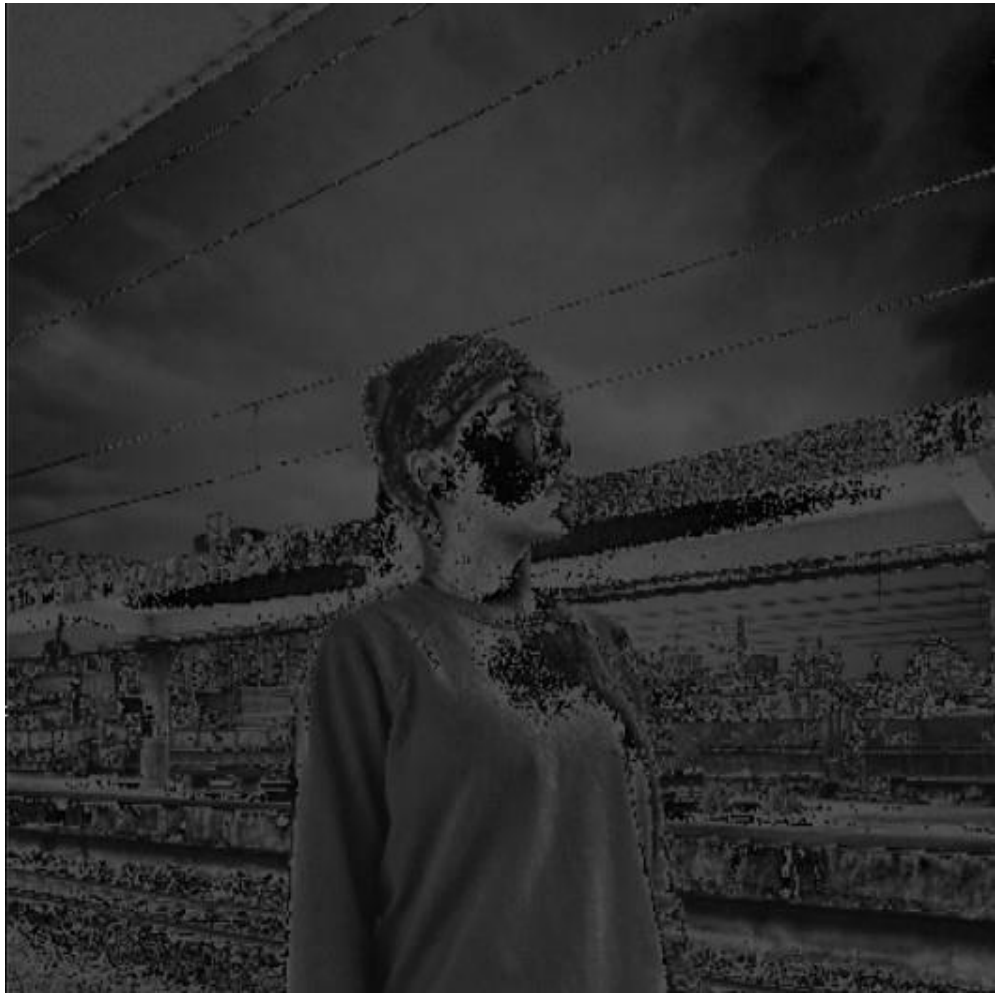
Homework 1 (Due: 3/9)

1. Input a color image $C(R,G,B)$
2. Output the color image C
3. Transform the color image C into a grayscale image I by $I = (R+G+B)/3$
4. Show the grayscale image I.

input



output



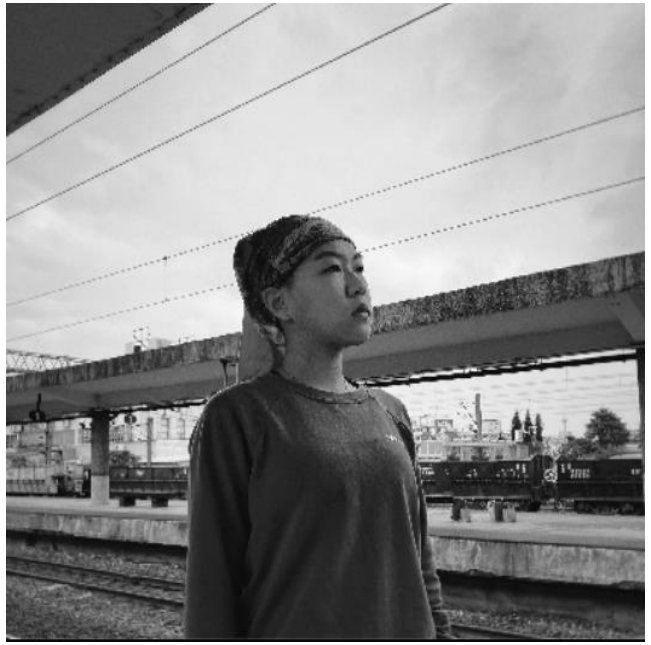
Source code

```
import cv2
import numpy as np

img = cv2.imread('test_input.jpg')
cv2.namedWindow('test_input', cv2.WINDOW_NORMAL)
cv2.imshow('test_input', img)
cv2.waitKey(0)
cv2.destroyAllWindows()

zero_channel = np.zeros(img.shape[0:2], dtype = "uint8")
B, G, R = cv2.split(img)
X = (R+G+B)/3
X = X.astype(np.uint8)
imgBGR = X

cv2.namedWindow('test_output', cv2.WINDOW_NORMAL)
cv2.imshow("test_output", imgBGR)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

comments

I found that if using the function (R+G+B)/3, the output image looks ugly.
But if changing the function to (0.3 * R) + (0.59 * G) + (0.11 * B), the output image looks better

(0.3 * R) + (0.59 * G) + (0.11 * B)



(R+G+B)/3