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In [ ]: %matplotlib inline
import cv2 as cv
import matplotlib.pyplot as plt
import numpy as np

c = np.array([(100,100), (100,150), (220,250), (220,220)])

t1 = np.linspace(0, c[0,1], c[0,0]+1 - 0 ).astype('uint8')
print(len(t1))
t2 = np.linspace(c[0,1]+1, c[1,1], c[1,0]-c[0,0]).astype('uint8')
print(len(t2))
t3 = np.linspace(c[1,1]+1, c[2,1], c[2,0] - c[1,0] ).astype('uint8')
print(len(t3))
t4 = np.linspace(c[2,1]+1, c[3,1], c[3,0] - c[2,0]).astype('uint8')
print(len(t4))
t5 = np.linspace(c[3,1]+1, 255, 255- c[3,0] ).astype('uint8')
print(len(t5))

transform = np.concatenate((t1,t2), axis=0).astype('uint8')
transform = np.concatenate((transform,t3), axis=0).astype('uint8')
transform = np.concatenate((transform,t4), axis=0).astype('uint8')
transform = np.concatenate((transform,t5), axis=0).astype('uint8')

print(len(transform))

fig , ax = plt.subplots()
ax.plot(transform)
ax.set_xlabel(r'Input,  $f(\mathbf{x})$ $')
ax.set_ylabel('Output,  $\mathbf{T}[f(\mathbf{x})]$ $')
ax.set_xlim(0,255)
ax.set_ylim(0,255)
ax.set_aspect('equal')
# plt.savefig('../transform.png')

plt.show()

img_org = cv.imread('../Resources/natasha_grayscale.jpg', cv.IMREAD_GRAYSCALE)
print(img_org.shape)
cv.namedWindow('Image', cv.WINDOW_AUTOSIZE)
cv.imshow('Image', img_org)
cv.waitKey(0)
image_transformed = cv.LUT(img_org,transform)
cv.imshow('Image', image_transformed)
cv.waitKey(0)
cv.destroyAllWindows()

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101

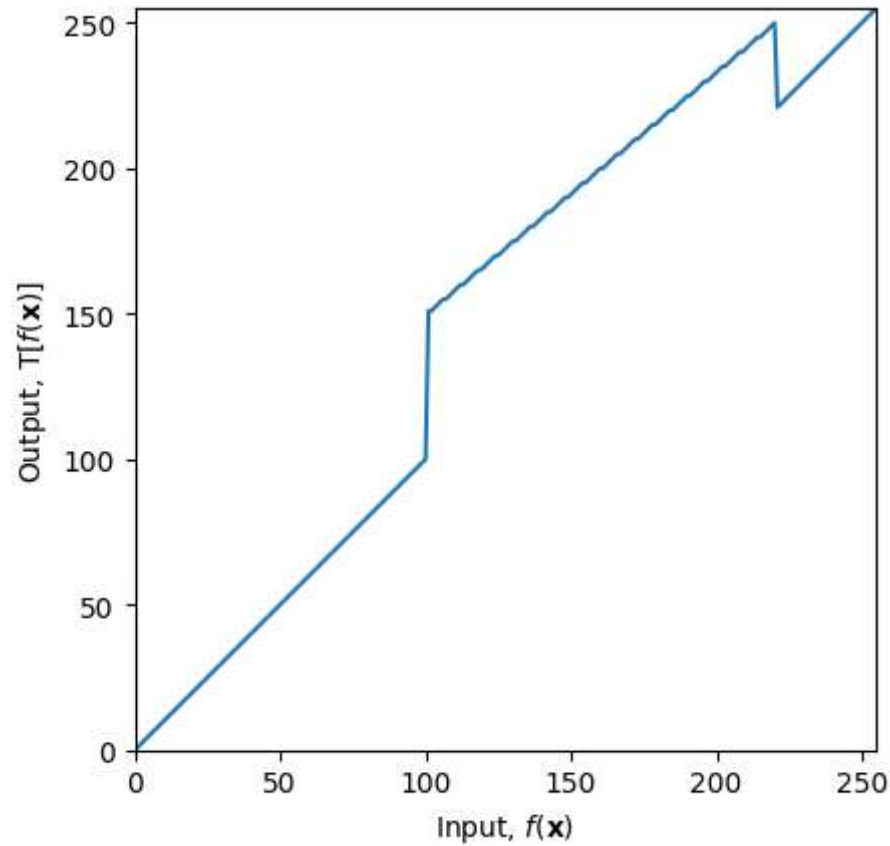
0

120

0

35

256



(400, 700)