

Bansilal Ramnath Agarwal Charitable Trust's Vishwakarma Institute of Information Technology

Department of Artificial Intelligence and Data Science

Name: Siddhesh Dilip Khairnar

Class: TY Division: B Roll No: 372028

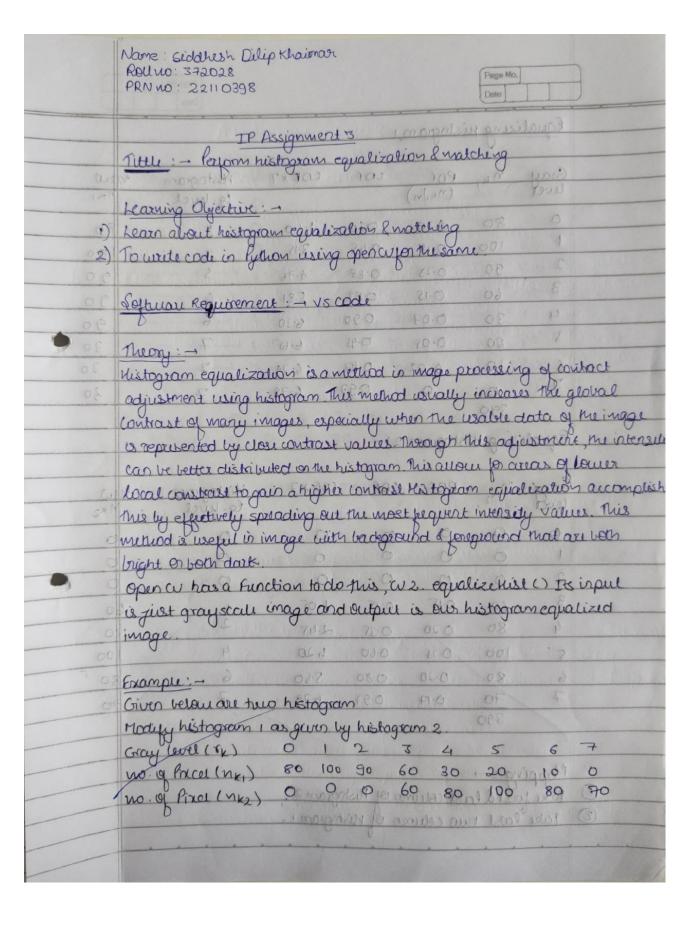
Semester: V Academic Year: 2023-2024

Subject Name & Code: Image Processing: ADUA31205(B)

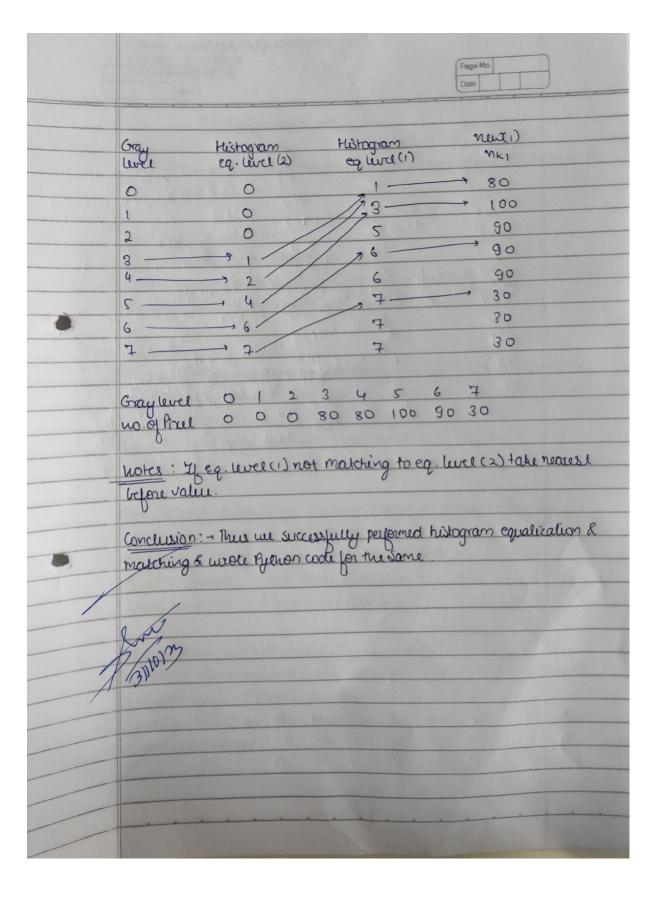
Title of Assignment: Perform histogram equalization and matching.

Date of Performance: 22-08-2023 Date of Submission: 29-08-2023

ASSIGNMENT NO. 3



| | | | | | enmindt qu | Page No. | and A |
|---|-----------|-------------|----------------|--------------|---|--------------------|--|
| | Equali | zing ni | stogram | Day () Dunn | Asignmen | Telegraph | A PAGE |
| | Gray | nkı | POF (Mkilm) | COF | COFX7 | Histogram | new |
| | 0 | 80 | 0.20 | 010 | SHELD STREET, | moderal fine for | |
| | - | 100 | 0.25 | 0.45 | 3:12 | Ma 3 mosts | 100 |
| | 2 | 90 | 0.72 | 0.68 | 4.76 | 5 | 90 |
| | 3 | 60 | 0.12 | 0.83 | N C.81 | amoni 609 m | 30 |
| | 4 | 30 | 0.07 | 0.90 | 6.30 | 6 | 90 |
| | 2 | 20 | 0.05 | 56.0 | 6.12 | 7, | 30 |
| Jones de la contraction de la | 6 | 1000 | 0.02 | 0.97 | 6:79 | san Faraliza | 30 |
| Loval | | | | | | d court 7 many | |
| No man | ia intro- | 390 | Lout and | ودوالديه | Dee espois | VI LIDOW JOI TX | ndwo) |
| the person | | | | | | asserted the clay | |
| K91193 | | V | | | | e Levier chistolia | |
| dalawana o o | | | | | | Histogram | |
| 2111 20 | leve | 2 PANIAL | Donorda | SAM JUST | up nythou | Eq. level | NK2 |
| | | | | | | viai Parise | A STATE OF THE PARTY OF THE PAR |
| | 1 | 0 | 0 | | | Am O May 10 | |
| 1 mai | 2 | , 0 | 000 | | | and Pend | |
| 111441 | 3 | 60 | 0.15 | 0:15 | 1.05 | Sul-transit | 10 |
| hisa | 4 | 80 | 0.20 | 0.35 | 2.65 | 2000 | 200 |
| | 5 | 100 | 6.4 | | 4.20 | 4 | abunis. |
| | | 89/ | - | | | 6 | 100 |
| | 7 | 40 | 0.17 | 0.97 | b-79 | 7 | Juny 80 |
| | 1 | 390 | 0 | 1 | or Corsu c | med of main | 07(11)70 |
| | 6 | | 2 070 | Acres 14 B | A complexe | histogram I | Should |
| 4 | 44 | 5.0 | 27 0 | 3 08 | ant an | (vis en | Typia |
| 0 | Mappe | ng - | 08,00 | 201 1/21 | 0 08 | face (ne) | NO 19 |
| 0 | Take | ustali | and com | or of rush | gram 2 | Axel (NKZ) | 10.00 |
| 0 | Take | last t | mo com | on of his | udram 1 - | | |
| | - | - | | | | | |
| | | | | | | | |



Program Code:

```
import cv2 as cv
import numpy as np
from matplotlib import pyplot as plt
path = "pexels-jonathan-borba-3076516.jpg"
img = cv.imread(path)
cv.imshow('Original Image', img)
hist, bins = np.histogram(img.flatten(), 256, [0, 256])
cdf = hist.cumsum()
cdf_normalized = cdf * float(hist.max()) / cdf.max()
plt.plot(cdf normalized, color='b')
plt.hist(img.flatten(), 256, [0, 256], color='r')
plt.xlim([0, 256])
plt.legend(('CDF', 'Histogram'), loc='upper left')
plt.show()
graying = cv.cvtColor(img, cv.COLOR_BGR2GRAY)
cv.imshow('Grayscale Image', graying)
equ = cv.equalizeHist(graying)
cv.imshow('Equalized Image', equ)
hist, bins = np.histogram(equ.flatten(), 256, [0, 256])
cdf = hist.cumsum()
cdf_normalized = cdf * float(hist.max()) / cdf.max()
plt.figure()
plt.plot(cdf_normalized, color='b')
plt.hist(equ.flatten(), 256, [0, 256], color='r')
plt.xlim([0, 256])
plt.legend(('CDF', 'Histogram'), loc='upper left')
plt.show()
cv.waitKey(0)
cv.destroyAllWindows()
```

Output:



