hsvhisteq-Copy2

September 13, 2019

[144]:
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import cv2
import numpy as np
from matplotlib import pyplot as plt
# Load the image
inputfile="img2597810ANPR_L00.jpg"
outputfile="out.jpg"
path1 = "/home/user/Downloads/DAY2/SET7A1/"
img = cv2.imread(path1+inputfile)

background= cv2.imread("back.jpg")

per=50
width= int( (img.shape[1]*per) / 100)
height= int ((img.shape[0]*per) /100 )
dim=(width, height)
img = cv2.resize(img,dim, interpolation = cv2.INTER_AREA)
image=img
per1=50
width1= int( (background.shape[1]*per) / 100)
height1= int ((background.shape[0]*per) /100 )
dim1=(width1, height1)
background = cv2.resize(background,dim1, interpolation = cv2.INTER_AREA)
img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
image=img

background = cv2.cvtColor(background, cv2.COLOR_BGR2RGB)
img = cv2.cvtColor(img, cv2.COLOR_RGB2HSV)
background= cv2.cvtColor(background, cv2.COLOR_RGB2HSV)
H, S, V = cv2.split(img)
BH, BS, BV= cv2.split(background)
alpha1 = 0.2 ; beta1 = 0.8 ; thetas= 1; thetah= 1
s=V
import sys
V = np.float32(V)/255
BV= np.float32(BV)/255
S = np.float32(S)/255
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BS= np.float32(BS)/255
H = np.float32(H)/255
BH= np.float32(BH)/255
s= V.copy()

for i in range(H.shape[0]):
    for j in range(H.shape[1]):
        try:
            x= V[i,j]/ BV[i,j]
        except ZeroDivisionError:
            x = 0

        if ( (alpha1 <= x <= beta1) and (abs(S[i,j]-BS[i,j])<= thetas) and␣
 ↪(abs(H[i,j]-BH[i,j])<=thetah)) :
            s[i,j]=1
        else:
            s[i,j]=0

s=s*255

s = np.array(s,dtype=np.uint8)
median = cv2.medianBlur(s, 5)
kernel = np.ones((3,3), np.uint8)
closing = cv2.morphologyEx(median, cv2.MORPH_CLOSE, kernel)
opening = cv2.morphologyEx(closing, cv2.MORPH_OPEN, kernel)


opening = np.array(opening,dtype=np.uint8)

result = image.copy()
height=result.shape[0]
width=result.shape[1]
blank_image = np.zeros((height,width,3), np.uint8)

blank_image[opening!=0] = image[opening!=0]
blank_image1=np.uint8(np.double(blank_image)*1.2 + 5)


claheimg = np.zeros((height,width,3), np.uint8)
claheimg[opening==0]=image[opening==0]
clahe = cv2.createCLAHE(clipLimit=9.0,tileGridSize=(5, 5))

claheimg[:,:,0] = clahe.apply(blank_image1[:,:,0])
claheimg[:,:,1] = clahe.apply(blank_image1[:,:,1])
claheimg[:,:,2] = clahe.apply(blank_image1[:,:,2])
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claheimg[opening==0]=image[opening==0]

cv2.imwrite(path1+outputfile,claheimg)
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[144]:
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True
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