Computer Vision I \_2018

Homework assignment #1

B03502076 機械所製造組碩一 林温雅

#使用python

#import套件

from PIL import Image

import numpy as np

#讀取lena.bmp與新建三個bmp檔

im = Image.open("lena.bmp") #讀取原始圖檔

im\_upsidedown = Image.new("L", (512,512)) #新建上下顛倒圖檔

im\_rightsideleft = Image.new("L", (512,512)) #新建左右顛倒圖檔

im\_diagonal = Image.new("L", (512,512)) #新建對角線對稱圖檔

#先儲存原始資訊

original = np.zeros([512,512]) #儲存原始圖檔pixels之value

for i in range (512):

for j in range (512):

original[i, j] = im.getpixel((i,j))

#改變pixel位置，根據需求填入三個bmp檔中

for i in range (512):

for j in range (512):

#上下顛倒

im\_upsidedown.putpixel((i,j), int(original[i, 511-j]))

#左右顛倒

im\_rightsideleft.putpixel((i,j), int(original[511-i, j]))

#對角線

im\_diagonal.putpixel((i,j), int(original[j, i]))

#顯示

im.show()

im\_upsidedown.show()

im\_rightsideleft.show()

im\_diagonal.show()

#儲存

im\_upsidedown.save("im\_upsidedown.bmp", "bmp")

im\_rightsideleft.save("im\_rightsideleft.bmp", "bmp")

im\_diagonal.save("im\_diagonal.bmp", "bmp")

#Part2之(c)

im\_binary = Image.new("L", (512,512), 255)

for i in range (512):

for j in range (512):

if original[i,j] < 128:

im\_binary.putpixel((i,j), 0)

im\_binary.show()

im\_binary.save("im\_binary.bmp", "bmp")