제어지능SW개발

11주차 과제

201708015

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이한결

텍스트, 데크이(가) 표시된 사진

자동 생성된 설명텍스트이(가) 표시된 사진

자동 생성된 설명과제 1.

import numpy as np

import cv2 as cv

img\_org = cv.imread("image1.jpg")

img = np.copy(img\_org)

x\_down, y\_down, x\_up, y\_up = np.zeros(4, dtype=np.uint8)

def Click(event, x, y, flags, param):

global x\_down, y\_down, x\_up, y\_up

if event == 2:

if x\_down > x\_up:

x\_down, x\_up = x\_up, x\_down

if y\_down > y\_up:

y\_down, y\_up = y\_up, y\_down

img\_event = np.copy(img\_org[y\_down:y\_up+1, x\_down:x\_up+1])

x\_len, y\_len = x\_up - x\_down + 1, y\_up - y\_down + 1

x\_hlen, y\_hlen = x\_len // 2, y\_len // 2

y\_left = y - y\_hlen

y\_right = y + y\_hlen + y\_len % 2

x\_left = x - x\_hlen

x\_right = x + x\_hlen + x\_len % 2

y\_ld, y\_rd, x\_ld, x\_rd = np.zeros(4, dtype=np.int8)

if y\_left < 0:

y\_ld = -y\_left

y\_left = 0

if x\_left < 0:

x\_ld = -x\_left

x\_left = 0

if x\_right > 255:

x\_rd = x\_right - 255

x\_right = 255

if y\_right > 255:

y\_rd = y\_right - 255

y\_right = 255

img[y\_left : y\_right , x\_left : x\_right] = img\_event[y\_ld:y\_len-y\_rd,x\_ld:x\_len-x\_rd]

cv.imshow("img", img)

if event == 1:

x\_down, y\_down = x, y

img\_org[:,:] = img[:,:]

cv.setMouseCallback("img", Drag)

def Mouse\_up(x, y):

global x\_up, y\_up

x\_up = x

y\_up = y

cv.imshow('img', img\_org)

cv.setMouseCallback("img", Click)

def Drag(event, x, y, flags, param):

global x\_down, y\_down

xx = x\_down

yy = y\_down

if event == 0:

img = np.copy(img\_org)

cv.rectangle(img, (xx, yy), (x, y), (0, 255, 255))

cv.imshow('img', img)

if event == 4:

Mouse\_up(x, y)

def Mouse\_down(event, x, y, flags, param):

global x\_down, y\_down

if event == 1:

x\_down, y\_down = x, y

cv.setMouseCallback("img", Drag)

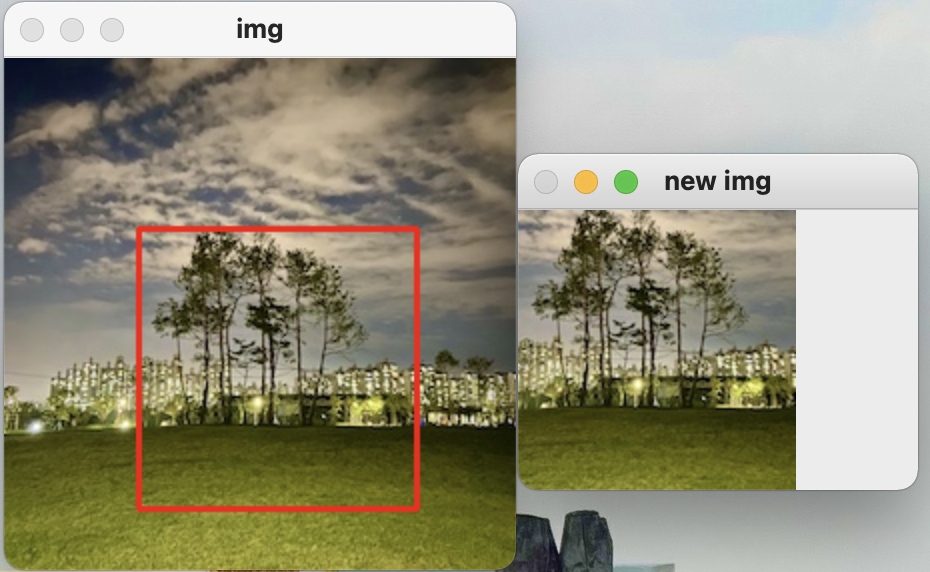
cv.namedWindow("img")

cv.setMouseCallback("img", Mouse\_down)

cv.imshow("img",img\_org)

cv.waitKey(0)

cv.destroyAllWindows()

과제 2.

import cv2 as cv

import numpy as np

import time

isDragging = False

x0, y0, w, h = -1, -1, -1, -1

blue, red = (255, 0, 0), (0, 0, 255)

turn = 0

img = cv.imread('image2.jpg')

def onMouse(event, x, y, flags, param):

global isDragging, x0, y0, img, turn, roi, w, h

if event == cv.EVENT\_LBUTTONDOWN:

isDragging = True

x0, y0 = x, y

elif event == cv.EVENT\_MOUSEMOVE:

if isDragging:

img\_draw = img.copy()

cv.rectangle(img\_draw, (x0,y0),(x,y),blue,2)

cv.imshow('img', img\_draw)

elif event == cv.EVENT\_LBUTTONUP:

if isDragging:

isDragging = False

w = x-x0

h = y-y0

if w>0 and h>0:

img\_draw = img.copy()

cv.rectangle(img\_draw, (x0,y0),(x, y), red, 2)

cv.imshow('img', img\_draw)

roi = img[y0:y0+h, x0:x0+w]

cv.imwrite("new img.jpg", roi)

cv.imshow("new img",roi)

else:

cv.imshow('img',img)

print('왼쪽부터 드래그를 하세요')

cv.imshow('img',img)

cv.setMouseCallback('img', onMouse)

cv.waitKey()

cv.destroyAllWindows()

과제 3.

텍스트, 스크린샷, 전자기기, 디스플레이이(가) 표시된 사진

자동 생성된 설명텍스트, 문구이(가) 표시된 사진

자동 생성된 설명텍스트, 실내, 스크린샷이(가) 표시된 사진

자동 생성된 설명

import cv2 as cv

import numpy as np

import time

def myShow(title, img):

cv.imshow(title, img)

if cv.waitKey(0) & 0XFF == 27:

cv.destroyAllwindows()

exit(0)

else:

cv.destroyWindow(title)

img = cv.imread('image1.jpg')

cv.imshow("meet",img)

row, cols, ch = img.shape

M = cv.getRotationMatrix2D(((cols-1)/2.0, (row-1)/2.0), 45, 1)

rotationImg = cv.warpAffine(img, M, (cols, row))

myShow("rotation", rotationImg)

pts1 = np.float32([[0,0], [0,255], [255,0]])

pts2 = np.float32([[100,100], [0,255],[255,0]])

M = cv.getAffineTransform(pts1, pts2)

affineImg = cv.warpAffine(img, M, (cols, row))

myShow("affine", affineImg)

pts1 = np.float32([[0,0], [0,255], [255,0], [255,255]])

pts2 = np.float32([[0,0], [0,255], [255,0], [255,255]])

M = cv.getPerspectiveTransform(pts1, pts2)

perspctiveImg = cv.warpPerspective(img, M, (500,500))

cv.rectangle(perspctiveImg, (0,0), (254,254), (0,128,64), 2)

myShow("perspective", perspctiveImg)

cv.destroyAllWindows()

텍스트, 다채로운, 다른이(가) 표시된 사진

자동 생성된 설명과제 4.

import numpy as np

import cv2 as cv

sample1 = cv.resize(cv.imread("image1.jpg"),(256,256))

image1 = cv.resize(cv.imread("image2.jpg"),(256,256))

image2 = cv.resize(cv.imread("image4.jpg"),(256,256))

cv.imshow('sample1', sample1)

cv.imshow('image1', image1)

cv.imshow('image2', image2)

np.random.seed(seed=5)

for i in range(9):

img = np.zeros((256, 256, 3), dtype=np.int8)

rimg = [0, 1, 2]

np.random.shuffle(rimg)

rn = np.random.randint(low=0, high=2, size=3)

img[:,:,rimg[0]] = sample1[:,:,rn[0]]

img[:,:,rimg[1]] = image1[:,:,rn[1]]

img[:,:,rimg[2]] = image2[:,:,rn[2]]

cv.imshow('img{0}'.format(i+1), img)

cv.waitKey(0)

cv.destroyAllWindows()