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VIT-IOT-INDUSTRY CERTIFICATE-EXTERNSHIP PROGRAM

ASSIGNMENT-6

Assignment-6

Develop a python code to detect any object using Haar cascade classifier.

PYTHON CODE:

Assignment 6.py - D:/Assignment 6/Assignment 6.py (3.9.6)

File Edit Format Run Options Window Help

```
import cv2

face_classifier=cv2.CascadeClassifier("haarcascade_frontalface_default.xml")
eye_classifier=cv2.CascadeClassifier("haarcascade_eye.xml")
#It will read the first frame/image of the video
video=cv2.VideoCapture(0)

while True:
    #capture the first frame
    check,frame=video.read()
    gray=cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)


    #detect the faces from the video using detectMultiScale function
    faces=face_classifier.detectMultiScale(gray,1.3,5)
    eyes=eye_classifier.detectMultiScale(gray,1.3,5)

    print(faces)

    #drawing rectangle boundries for the detected face
    for(x,y,w,h) in faces:
        cv2.rectangle(frame, (x,y), (x+w,y+h), (127,0,255), 2)
        cv2.imshow('Face detection', frame)
        #picname=datetime.datetime.now().strftime("%y-%m-%d-%H-%M")
        #cv2.imwrite(picname+".jpg",frame)

    #drawing rectangle boundries for the detected eyes
    for(ex,ey,ew,eh) in eyes:
        cv2.rectangle(frame, (ex,ey), (ex+ew,ey+eh), (127,0,255), 2)
        cv2.imshow('Face detection', frame)

    #waitKey(1)- for every 1 millisecond new frame will be captured
    Key=cv2.waitKey(1)
    if Key==ord('q'):
        #release the camera
        video.release()
        #destroy all windows
        cv2.destroyAllWindows()
        break
```

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```
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    faces=face_classifier.detectMultiScale(gray,1.3,5)
    eyes=eye_classifier.detectMultiScale(gray,1.3,5)

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    #drawing rectangle boundries for the detected face
    for(x,y,w,h) in faces:
        cv2.rectangle(frame, (x,y), (x+w,y+h), (127,0,255), 2)
        cv2.imshow('Face detection', frame)
        #picname=datetime.datetime.now().strftime("%y-%m-%d-%H-%M")
        #cv2.imwrite(picname+".jpg",frame)

    #drawing rectangle boundries for the detected eyes
    for(ex,ey,ew,eh) in eyes:
        cv2.rectangle(frame, (ex,ey), (ex+ew,ey+eh), (127,0,255), 2)
        cv2.imshow('Face detection', frame)
```

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```
#waitKey(1)- for every 1 millisecond new frame will be captured
Key=cv2.waitKey(1)
if Key==ord('q'):
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    video.release()
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```
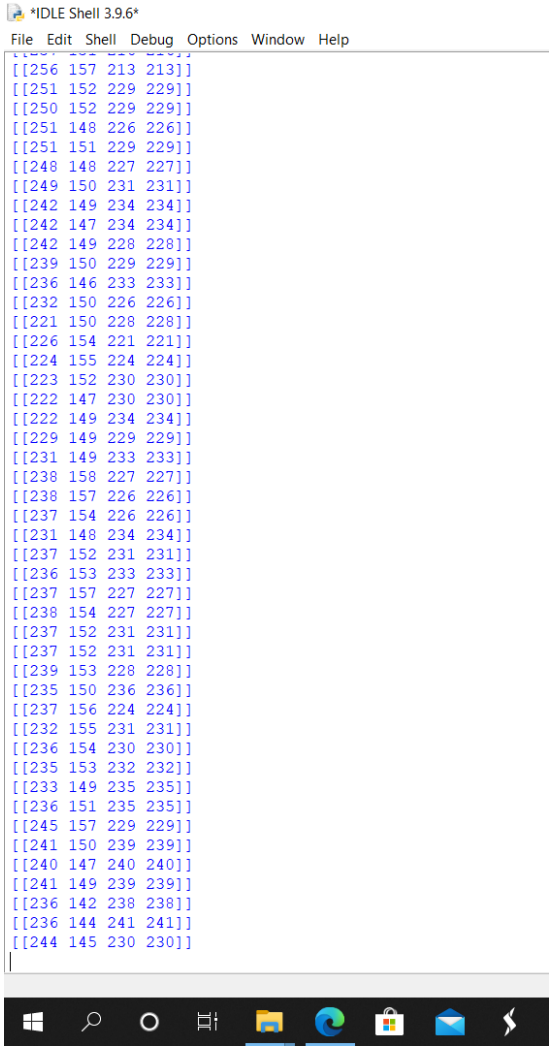

PYTHON SHELL:



PYTHON CODE:

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car.py - C:\Users\Soujanya\Desktop\car\car.py (3.9.6)

File Edit Format Run Options Window Help

```
import cv2

car_classifier=cv2.CascadeClassifier("haarcascade_car.xml")


video=cv2.VideoCapture("car.avi")
frame_width = int(video.get(3))
frame_height = int(video.get(4))
out = cv2.VideoWriter('Output.avi',cv2.VideoWriter_fourcc('M','J','P','G'), 10, (frame_width,frame_height))

while True:
    #capture the first frame
    check,frame=video.read()
    gray=cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
    cv2.imshow('frame', gray)

    #detect the faces from the video using detectMultiScale function
    cars=car_classifier.detectMultiScale(gray,1.3,5)
    print(cars)

    #drawing rectangle boundries for the detected face
    for(x,y,w,h) in cars:
        cv2.rectangle(frame, (x,y), (x+w,y+h), (255,0,0), 2)
        cv2.imshow('Face detection', frame)
        out.write(frame)
        #picname=datetime.datetime.now().strftime("%y-%m-%d-%H-%M")
        #cv2.imwrite(picname+".jpg",frame)


    #waitKey(1)- for every 1 millisecond new frame will be captured
    Key=cv2.waitKey(1)
    if Key==ord('q'):
        #release the camera
        #video.release()
        #destroy all windows
        out.release()
        cv2.destroyAllWindows()
        break
```

import cv2

car_classifier=cv2.CascadeClassifier("haarcascade_car.xml")

video=cv2.VideoCapture("car.avi")

frame_width = int(video.get(3))

frame_height = int(video.get(4))

out = cv2.VideoWriter('Output.avi',cv2.VideoWriter_fourcc('M','J','P','G'), 10, (frame_width,frame_height))

while True:

  #capture the first frame

  check,frame=video.read()

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```
gray=cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
cv2.imshow('frame', gray)

#detect the faces from the video using detectMultiScale function
cars=car_classifier.detectMultiScale(gray,1.3,5)
print(cars)

#drawing rectangle boundries for the detected face
for(x,y,w,h) in cars:
    cv2.rectangle(frame, (x,y), (x+w,y+h), (255,0,0), 2)
    cv2.imshow('Face detection', frame)
    out.write(frame)
    #picname=datetime.datetime.now().strftime("%y-%m-%d-%H-%M")
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```