VIT SMART BRIDGE IOT EXTERNSHIP

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Assignment:06

Topic: Develop a python code to detect any object using

Haarcascade classifier.

Here, I am detecting smile, body, face and eyes using Haarcascade classifier.

Code:

```
import cv2
import datetime
face_classifier=cv2.CascadeClassifier("haarcascade_frontalface_default.xml")
eye_classifier=cv2.CascadeClassifier("haarcascade_eye.xml")
body_classifier=cv2.CascadeClassifier("haarcascade_fullbody.xml")
smile_classifier=cv2.CascadeClassifier("haarcascade_smile.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)
cv2.imshow('Video',gray)


#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)

#detect the smile from  the video using detectMultiScale function
smile=smile_classifier.detectMultiScale(gray,1.3,5)

#Pass frame to our body classifier
bodies = body_classifier.detectMultiScale(gray, 1.1, 3)

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('Object detection', frame)
    cv2.putText(frame,'Face',(x,y-
10),cv2.FONT_HERSHEY_COMPLEX_SMALL,1,(255,0,0),4)
```

```
    #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('Object detection', frame)

    #drawing rectangle boundries for the detected cars
    for (cx,cy,cw,ch) in smile:
        cv2.rectangle(frame, (cx,cy),(cx+cw,cy+ch), (0, 255, 255), 2)
        cv2.putText(frame,'Smile',(cx,cy-
10),cv2.FONT_HERSHEY_COMPLEX_SMALL,1,(255,0,0),4)
        cv2.imshow('Object detection', frame)

    #drawing rectangle boundries for the detected bodies
    for (bx,by,bw,bh) in bodies:
        cv2.rectangle(frame,(bx,by),(bx+bw,by+bh), (0, 255, 255), 2)
        cv2.putText(frame,'Body',(bx,by-
10),cv2.FONT_HERSHEY_COMPLEX_SMALL,1,(255,0,0),4)
        cv2.imshow('Object 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
```

Output: