Face Detection Using Haar Cascade Classifier using OpenCV and Count Total Faces in Image

Code Explanation :

Importing cv2 Package

import cv2

Open CV Stands for Open Source Computer Vision , It is used for Computer Visionand Image Processing , It is written in python

Loading the haar-cascade xml classifier file

facecase= cv2.CascadeClassifier('/content/haarcasecade.xml')

The XML Files is created by Training with Both Positive and Negative Images , WeLoad XML File using cascade Classifier Function , haarcasecade classifier Algorithm for deteecting various objects likefaces based on Haar Features

Reading the Image

img = cv2.imread('/content/img.jpeg')

Here, we read an image file named "img.jpg" from the specified file path usingthe cv2.imread() function.

Converting Image to Gray Scale

gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)

The Above Line converts RGB Image to Gray Scale , Gray Scale Images have singlechannel

Applying the face detection method on the grayscale image

faces = facecase.detectMultiScale(gray, scaleFactor=1.1, minNeighbors=4)

Faces at multiple scale in image , Thescale factor and min neighbors control the sensitivity and accuracy of face detection, reducing Min neigbours to 4 allowing model to detect more number of faces .

Counting the number of faces

num_faces = len(faces)

It counts Number of detected face from image by calculating length of images.

rectangles of detected faces

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for (x, y, w, h) in faces:
    cv2.rectangle(img, (x, y), (x+w, y+h), (0, 255, 0), 2)
cv2.imshow('Detected ', img)
cv2.waitKey(0)
```