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Topic : Opencv Python Program For Face Detection

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In today's blog post you are going to learn how to perform face recognition in both images and video streams using:

- OpenCV
- Python

As we'll see, the deep learning-based facial embeddings we'll be using here today are both (1) *highly accurate* and (2) capable of being executed in *real-time*.

To learn more about face recognition with OpenCV, Python, and deep learning, *just keep reading!*

- Update July 2021: Added alternative face recognition methods section, including both deep learning-based and non-deep learning-based approaches.

Looking for the source code to this post?

OPENCV PYTHON PROGRAM FOR FACE DETECTION

```
# OpenCV program to detect face in real time
# import libraries of python OpenCV
# where its functionality resides
import cv2
# load the required trained XML classifiers
# data/haarcascades/haarcascade_frontalface_default.xml
# Trained XML classifiers describes some features of some
# object we want to detect a cascade function is trained
# from a lot of positive(faces) and negative(non-faces)
# images.
face_cascade = cv2.CascadeClassifier('haarcascade_frontalface_default.xml')
# /data/haarcascades/haarcascade_eye.xml
# Trained XML file for detecting eyes
eye_cascade = cv2.CascadeClassifier('haarcascade_eye.xml')
# capture frames from a camera
cap = cv2.VideoCapture(0)
# loop runs if capturing has been initialized.
while 1:
```

```
# reads frames from a camera
ret, img = cap.read()
# convert to gray scale of each frames
gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
# Detects faces of different sizes in the input image
faces = face_cascade.detectMultiScale(gray, 1.3, 5)
for (x,y,w,h) in faces:
# To draw a rectangle in a face
cv2.rectangle(img,(x,y),(x+w,y+h),(255,255,0),2)
roi_gray = gray[y:y+h, x:x+w]
roi_color = img[y:y+h, x:x+w]
# Detects eyes of different sizes in the input image
eyes = eye_cascade.detectMultiScale(roi_gray)
#To draw a rectangle in eyes
for (ex,ey,ew,eh) in eyes:
cv2.rectangle(roi_color,(ex,ey),(ex+ew,ey+eh),(0,127,255),2)
# Display an image in a window
cv2.imshow('img',img)
# Wait for Esc key to stop
k = cv2.waitKey(30) & 0xff
if k == 27:
break
# Close the window
cap.release()
# De-allocate any associated memory usage
cv2.destroyAllWindows()
```