r-detection-using-opencv-in-python

June 22, 2025

[ ]:

```python
import cv2
import matplotlib.pyplot as plt
```

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```python
# Input image
image = cv2.imread('image.jpg')
image = cv2.resize(image, (720, 640))
```

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```python
# Importing Models and set mean values
face1 = "opencv_face_detector.pbtxt"
face2 = "opencv_face_detector_uint8.pb"
age1 = "age_deploy.prototxt"
age2 = "age_net.caffemodel"
gen1 = "gender_deploy.prototxt"
gen2 = "gender_net.caffemodel"

MODEL_MEAN_VALUES = (78.4263377603, 87.7689143744, 114.895847746)

# Using models
# Face
face = cv2.dnn.readNet(face2, face1)

# age
age = cv2.dnn.readNet(age2, age1)

# gender
gen = cv2.dnn.readNet(gen2, gen1)
```

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```python
# Categories of distribution
la = ['(0-2)', '(4-6)', '(8-12)', '(15-20)',
      '(25-32)', '(38-43)', '(48-53)', '(60-100)']
lg = ['Male', 'Female']
```

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```python
# Copy image
fr_cv = image.copy()
```

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```python
# Face detection
fr_h = fr_cv.shape[0]
```

```
fr_w = fr_cv.shape[1]
blob = cv2.dnn.blobFromImage(fr_cv, 1.0, (300, 300),
                             [104, 117, 123], True, False)

face.setInput(blob)
detections = face.forward()
```

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```
# Face bounding box creation
faceBoxes = []
for i in range(detections.shape[2]):

    #Bounding box creation if confidence > 0.7
    confidence = detections[0, 0, i, 2]
    if confidence > 0.7:

        x1 = int(detections[0, 0, i, 3]*fr_w)
        y1 = int(detections[0, 0, i, 4]*fr_h)
        x2 = int(detections[0, 0, i, 5]*fr_w)
        y2 = int(detections[0, 0, i, 6]*fr_h)

        faceBoxes.append([x1, y1, x2, y2])

        cv2.rectangle(fr_cv, (x1, y1), (x2, y2),
                      (0, 255, 0), int(round(fr_h/150)), 8)

faceBoxes
```

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```
[[216, 87, 449, 304]]
```

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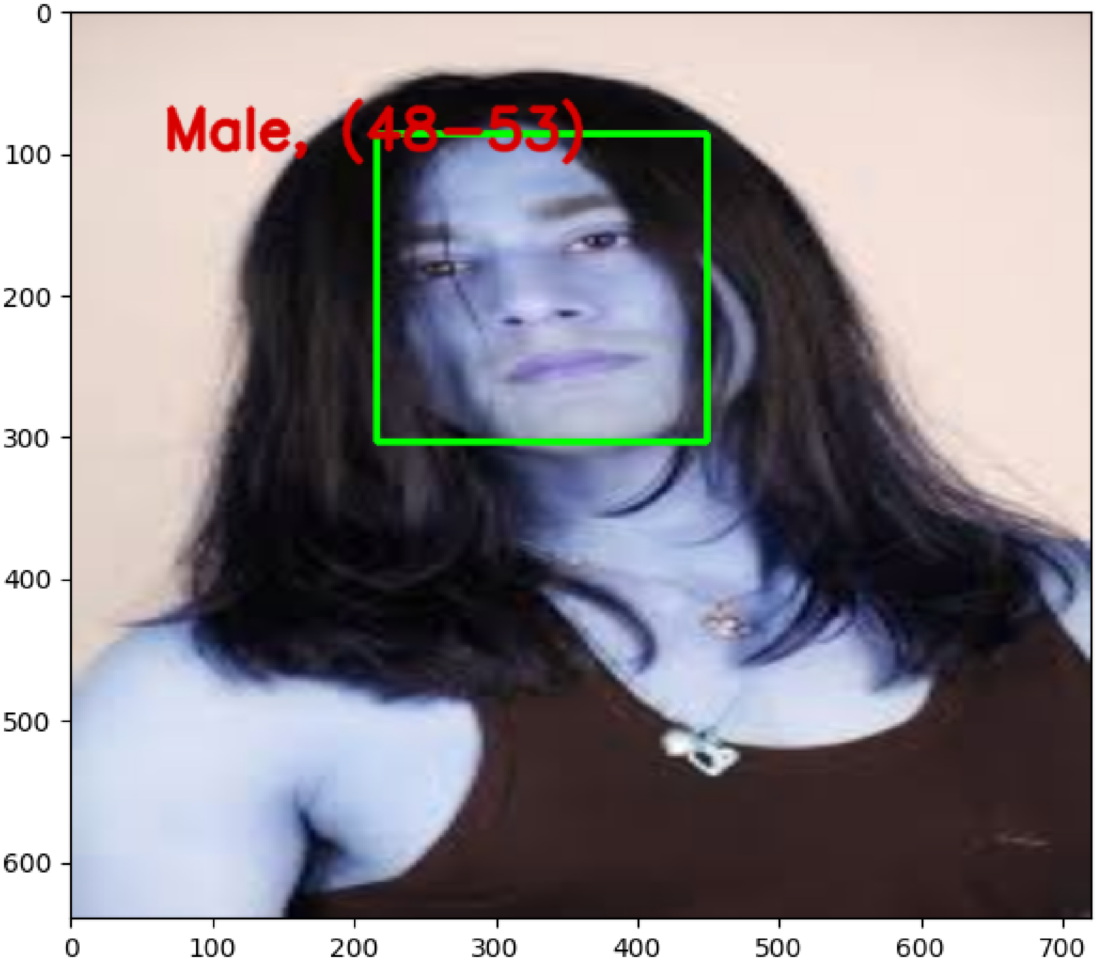
```
# Checking if face detected or not
if not faceBoxes:
    print("No face detected")

# Final results (otherwise)
# Loop for all the faces detected
for faceBox in faceBoxes:

    #Extracting face as per the faceBox
    face = fr_cv[max(0, faceBox[1]-15):
                 min(faceBox[3]+15, fr_cv.shape[0]-1),
                 max(0, faceBox[0]-15):min(faceBox[2]+15,
                              fr_cv.shape[1]-1)]

    #Extracting the main blob part
    blob = cv2.dnn.blobFromImage(
        face, 1.0, (227, 227), MODEL_MEAN_VALUES, swapRB=False)
    #Prediction of gender
    gen.setInput(blob)
    genderPreds = gen.forward()
    gender = lg[genderPreds[0].argmax()]

    #Prediction of age
    age.setInput(blob)
    agePreds = age.forward()
    age = la[agePreds[0].argmax()]

    #Putting text of age and gender
    #At the top of box
    cv2.putText(fr_cv,
                f'{gender}, {age}',
                (faceBox[0]-150, faceBox[1]+10),
                cv2.FONT_HERSHEY_SIMPLEX,
                1.3,
                (217, 0, 0),
                4,
                cv2.LINE_AA)

    plt.figure(figsize=(7, 7))
    plt.imshow(fr_cv)
```


Male, (48-53)
0
100
200
300
400
500
600
0
100
200
300
400
500
600
700