

Face Detection

Face Detection

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7.1 Introduction

This course mainly uses the IMX219 camera to obtain the camera image, detect faces and frame faces.

7.2 Core Content Analysis

Load face Haar feature data.

```
face_haar = cv2.CascadeClassifier("haarcascade_frontalface_default.xml")
```

Pass the image into the face haar parser to extract the face position information.

```
def face_detect(image):  
    gray_img = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)  
    faces = face_haar.detectMultiScale(gray_img, 1.1, 3)  
    for face_x, face_y, face_w, face_h in faces:  
        return "1", (face_x, face_y, face_w, face_h)  
    return None, (0, 0, 0, 0)
```

After turning on the start switch, determine whether there is a face in the returned image, and if so, frame the face.

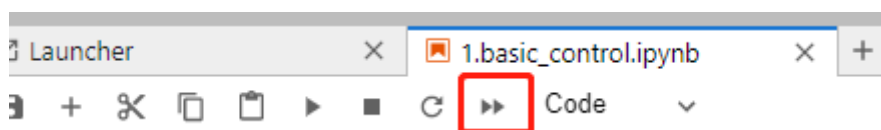
```
state, (face_x, face_y, face_w, face_h) = face_detect(frame)  
if state != None:  
    cv2.rectangle(frame, (face_x, face_y), (face_x+face_w, face_y+face_h),  
        (0, 255, 255), 1)
```

7.3 How to play

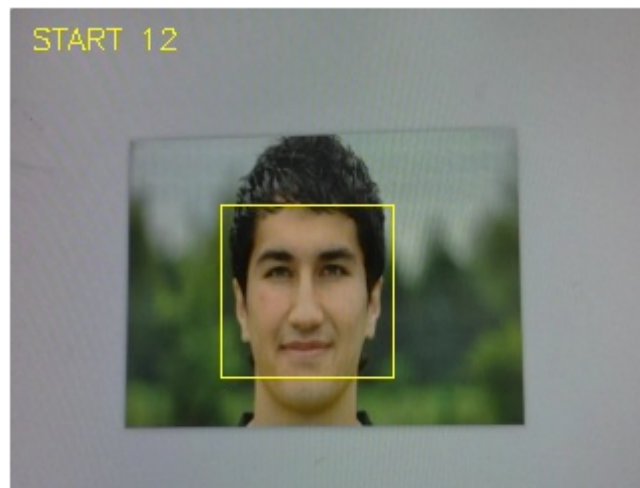
Open the jupyterLab client and find the code path:

```
/home/sunrise/sunriseRobot/Samples/2_AI/07_face_detect/face_detect.ipynb
```

Click to run all cells, then pull to the bottom to see the generated controls.



Click the Start button below to turn on the face detection function. When a face appears in the camera image, the face will be framed with a box.



Button clicked: Start True

Finally, click the Close_Camera button to close the camera.