

Object detection

1. Experimental purpose

Drive the car to detect human posture

2. Experimental path source code

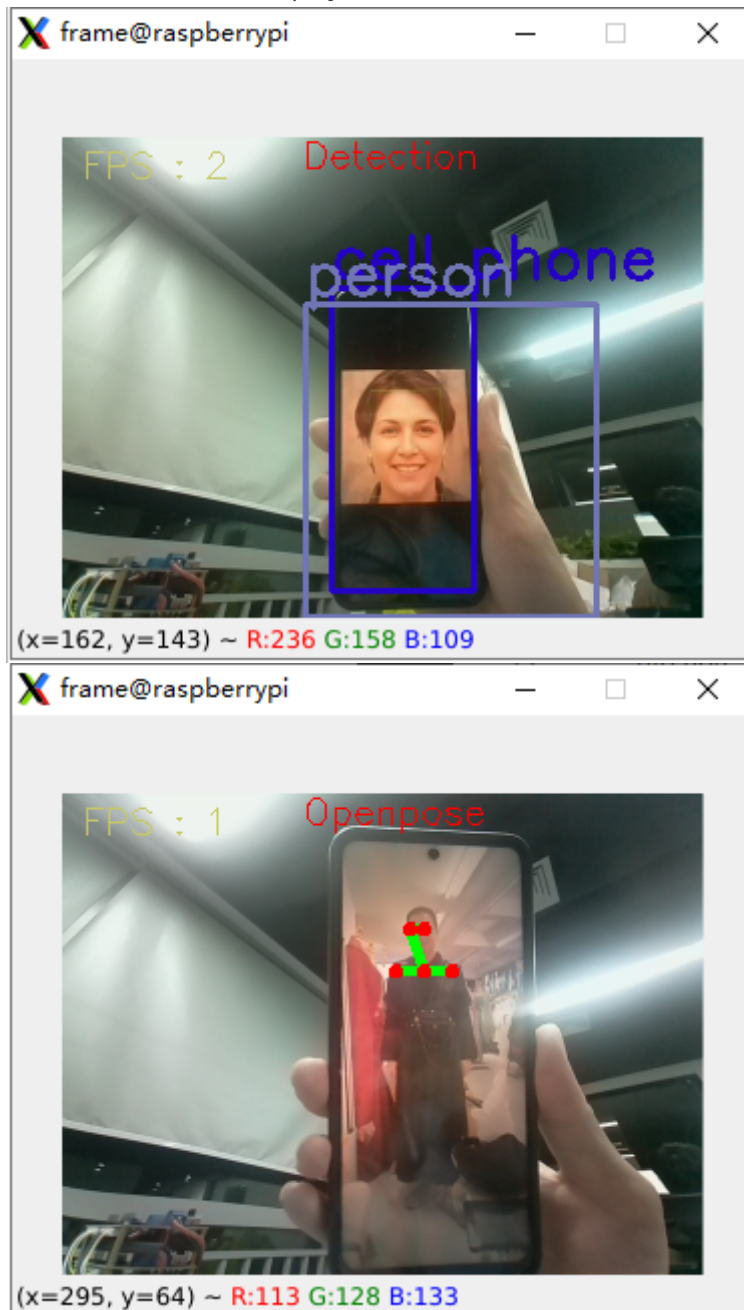
Enter the car system and end the car program

Enter the command in the terminal and start the python script directly

```
cd /home/pi/Rider-pi_class/5.AI Visual Recognition Course/9. Object  
detection/detection  
python3 target_detection_USB.py
```

3. Experimental phenomenon

After running the source code, you can see that the car will detect objects, and press the "f" button to switch the display



4. Main program source code

```
if __name__ == '__main__':
    capture = cv.VideoCapture(0)
    capture.set(3, 320)
    capture.set(4, 240)

    cv_edition = cv.__version__
    if cv_edition[0] == '3': capture.set(cv.CAP_PROP_FOURCC,
cv.VideoWriter_fourcc(*'XVID'))
    else: capture.set(cv.CAP_PROP_FOURCC, cv.VideoWriter_fourcc('M', 'J', 'P',
'G'))
    capture.set(cv.CAP_PROP_FRAME_WIDTH, 320)
    capture.set(cv.CAP_PROP_FRAME_HEIGHT, 240)
    state=True
    while capture.isOpened():
```

```

start = time.time()
ret, frame = capture.read()
action = cv.waitKey(10) & 0xFF
if state==True:
    frame = Target_Detection(frame)
    cv.putText(frame, "Detection", (120, 15), cv.FONT_HERSHEY_SIMPLEX,
0.6, (0, 0, 255), 1)
else:
    frame = openpose(frame)
    cv.putText(frame, "Openpose", (120, 15), cv.FONT_HERSHEY_SIMPLEX,
0.6, (0, 0, 255), 1)
    if action == ord('q') or action == ord('Q'): break
    if action == ord('f') or action == ord('F'): state = not state
end = time.time()
fps = 1 / (end - start)
text = "FPS : " + str(int(fps))
cv.putText(frame, text, (10, 20), cv.FONT_HERSHEY_SIMPLEX, 0.6, (100,
200, 200), 1)
cv.imshow('frame', frame)

#Display the image on the LCD screen
b, g, r = cv.split(frame)
image = cv.merge((r, g, b))
imgok = Image.fromarray(image)
display.ShowImage(imgok)

capture.release()
cv.destroyAllWindows()
display.clear()
splash = Image.new("RGB", (display.height, display.width), "black")
display.ShowImage(splash)

```

It can be seen from the source code that the car turns on the camera and displays the recognition results on the car screen and the computer screen.