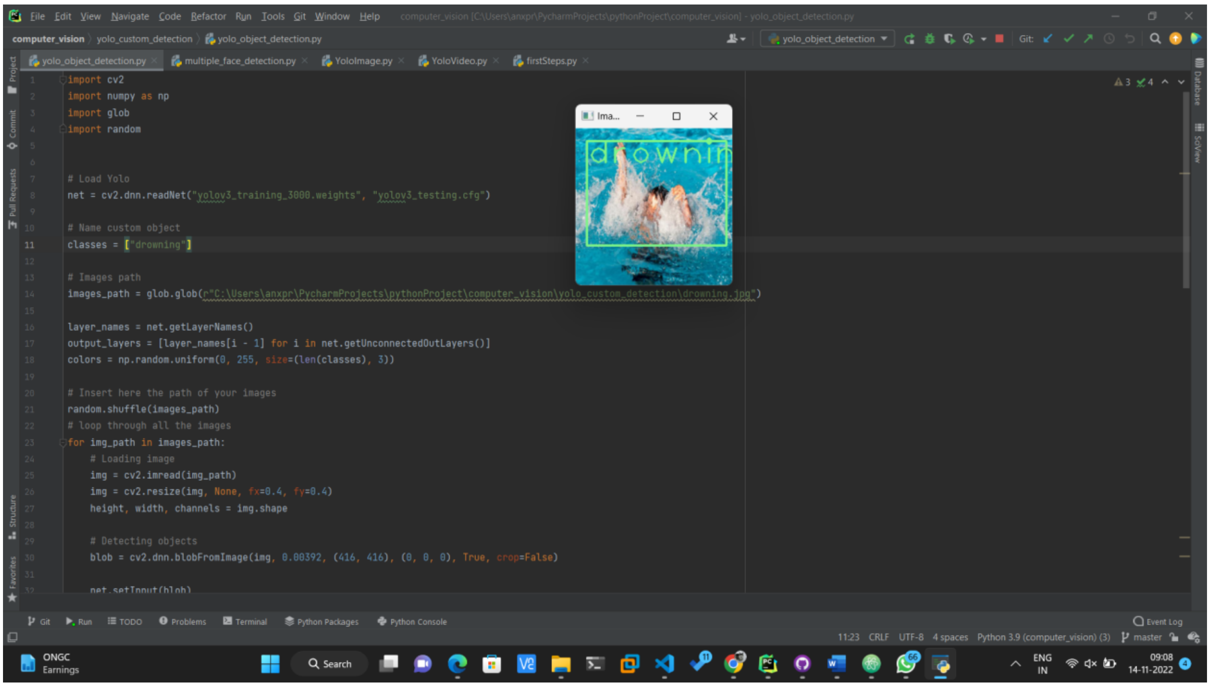
Testing the Model

Obtained weights file “yolov3_training_3000.weights” from training is used for testing detection on a sample image of a drowning subject

Code for Testing:

```
import cv2
import numpy as np
import glob
import random


# Load Yolo
net = cv2.dnn.readNet("yolov3_training_3000.weights", "yolov3_testing.cfg")

# Name custom object
classes = ["drowning"]

# Images path
images_path = glob.glob(r"C:\Users\anxpr\PycharmProjects\pythonProject\computer_vision\yolo_custom_detection\drowning.jpg")

layer_names = net.getLayerNames()
output_layers = [layer_names[i - 1] for i in net.getUnconnectedOutLayers()]
colors = np.random.uniform(0, 255, size=(len(classes), 3))

# Insert here the path of your images
random.shuffle(images_path)
# loop through all the images
for img_path in images_path:
    # Loading image
    img = cv2.imread(img_path)
    img = cv2.resize(img, None, fx=0.4, fy=0.4)
    height, width, channels = img.shape

    # Detecting objects
    blob = cv2.dnn.blobFromImage(img, 0.00392, (416, 416), (0, 0, 0), True, crop=False)
```

```
net.setInput(blob)
outs = net.forward(output_layers)

# Showing informations on the screen
class_ids = []
confidences = []
boxes = []
for out in outs:
    for detection in out:
        scores = detection[5:]
        class_id = np.argmax(scores)
        confidence = scores[class_id]
        if confidence > 0.3:
            # Object detected
            print(class_id)
            center_x = int(detection[0] * width)
            center_y = int(detection[1] * height)
            w = int(detection[2] * width)
            h = int(detection[3] * height)

            # Rectangle coordinates
            x = int(center_x - w / 2)
            y = int(center_y - h / 2)

            boxes.append([x, y, w, h])
            confidences.append(float(confidence))
            class_ids.append(class_id)

indexes = cv2.dnn.NMSBoxes(boxes, confidences, 0.5, 0.4)
print(indexes)
font = cv2.FONT_HERSHEY_PLAIN
for i in range(len(boxes)):
    if i in indexes:
        x, y, w, h = boxes[i]
        label = str(classes[class_ids[i]])
        color = colors[class_ids[i]]
        cv2.rectangle(img, (x, y), (x + w, y + h), color, 2)
        cv2.putText(img, label, (x, y + 30), font, 3, color, 2)
    cv2.imshow("Image", img)
    key = cv2.waitKey(0)

cv2.destroyAllWindows()
```



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computer_vision [C:\Users\anxpr\PycharmProjects\pythonProject\computer_vision] - yolo_object_detection.py
computer_vision 〉 yolo_custom_detection 〉 yolo_object_detection.py
yolo_object_detection.py
multiple_face_detection.py
YoloImage.py
YoloVideo.py
firstSteps.py
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TODO
Problems
Terminal
Python Packages
Python Console
Event Log
11:23 CRLF UTF-8 4 spaces Python 3.9 (computer_vision) (3) master
ONGC
Earnings
Search
ENG
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14-11-2022

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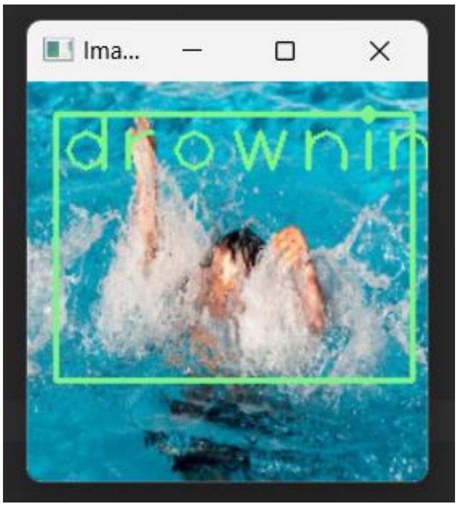
Output:



The model is successfully able to detect potential drowning subject from the sample image. The same could be used to detect potential subjects off of a video feed from a camera mounted over a swimming pool.