

FaceMaskDetection_Preprocessing_FMD

August 12, 2022

```
[1]: import os
import glob
import io
import xml.etree.ElementTree as ET
import argparse
import shutil
```

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[62]: import math
import cv2
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

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[137]: from PIL import Image
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[8]: os.getcwd()
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[8]: '/Users/gordid/Desktop/MS_AI/Data Mining/Project'
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```
[61]: def convert(size: tuple, box: list):
    """Takes as input: (width, height) of an image
    (xmin, ymin, xmax, ymax) of the bounding box
    and returns (x, y, w, h) of the bounding box in yolo format.
    """
    x = (box[2] + box[0])/2.0
    y = (box[3] + box[1])/2.0
    w = abs(box[2] - box[0])
    h = abs(box[3] - box[1])
    x = x/size[0]
    w = w/size[0]
    y = y/size[1]
    h = h/size[1]

    return (x, y, w, h)
```

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[68]: def xml_to_txt(input_path: str, output_path: str):
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```

"""Iterates through all .xml files (generated by labelImg) in the given_
↳directory,
and generates .txt files that comply with yolo format for each .xml file.
"""
class_mapping = {'with_mask' : '0',
                 'without_mask' : '1',
                 'mask_wearred_incorrect' : '1'}

if not glob.glob(input_path + '/*.xml'):
    raise(ValueError(f"Empty folder, there are no .xml files in_
↳{input_path}."))

for xml_file in glob.glob(input_path + '/*.xml'):
    tree = ET.parse(xml_file)
    root = tree.getroot()

    bb_list = []
    for element in root.findall("object"):
        file_name = root.find("filename").text
        width, height = int(root.find('size').find('width').text), int(root.
↳find("size").find('height').text)
        class_name = element[0].text

        bb = (float(element.find("bndbox").find("xmin").text),
              float(element.find("bndbox").find("ymin").text),
              float(element.find("bndbox").find("xmax").text),
              float(element.find("bndbox").find("ymax").text))

        bb = convert((width, height), bb)

        bb_list.append(class_mapping.get(class_name) + " " + " ".
↳join([str(l) for l in bb]) + "\n")

    print(f"Building: {file_name.split('.')[0]}.txt")
    with open(output_path + "/" + file_name.split(".")[0] + ".txt", "w") as_
↳writer:
        for string in bb_list:
            writer.write(string)

```

```

[69]: xml_to_txt('/Users/gordid/Desktop/MS_AI/Data Mining/Project/Dataset_853/
↳annotations/',
        '/Users/gordid/Desktop/MS_AI/Data Mining/Project/Dataset_853/images/
↳')

```

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Building: maksssksksss430.txt
Building: maksssksksss424.txt
Building: maksssksksss58.txt
Building: maksssksksss342.txt
Building: maksssksksss70.txt
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Building: maksssksksss394.txt
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Building: maksssksksss169.txt
Building: maksssksksss141.txt
Building: maksssksksss627.txt
Building: maksssksksss633.txt
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Building: maksssksksss800.txt
Building: maksssksksss814.txt
Building: maksssksksss182.txt
Building: maksssksksss828.txt
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Building: maksssksksss747.txt
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Building: maksssksksss551.txt
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Building: maksssksksss792.txt
Building: maksssksksss786.txt
Building: maksssksksss751.txt
Building: maksssksksss745.txt
Building: maksssksksss779.txt
Building: maksssksksss180.txt
Building: maksssksksss194.txt
Building: maksssksksss802.txt
Building: maksssksksss816.txt
Building: maksssksksss625.txt
Building: maksssksksss143.txt
Building: maksssksksss157.txt
Building: maksssksksss631.txt
Building: maksssksksss619.txt
Building: maksssksksss382.txt
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Building: maksssksksss427.txt
Building: maksssksksss433.txt
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Building: maksssksksss441.txt
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Building: maksssksksss333.txt
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Building: maksssksksss642.txt
Building: maksssksksss124.txt
Building: maksssksksss118.txt
Building: maksssksksss695.txt
Building: maksssksksss681.txt
Building: maksssksksss722.txt
Building: maksssksksss736.txt
Building: maksssksksss520.txt
Building: maksssksksss246.txt
Building: maksssksksss252.txt
Building: maksssksksss534.txt
Building: maksssksksss508.txt
Building: maksssksksss285.txt
Building: maksssksksss291.txt
Building: maksssksksss287.txt
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Building: maksssksksss278.txt
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Building: maksssksksss250.txt
Building: maksssksksss708.txt
Building: maksssksksss720.txt
Building: maksssksksss734.txt
Building: maksssksksss697.txt
Building: maksssksksss683.txt
Building: maksssksksss668.txt
Building: maksssksksss654.txt
Building: maksssksksss132.txt
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Building: maksssksksss640.txt
Building: maksssksksss495.txt
Building: maksssksksss481.txt
Building: maksssksksss16.txt
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Building: maksssksksss456.txt
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Building: maksssksksss17.txt
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Building: maksssksksss641.txt
Building: maksssksksss655.txt
Building: maksssksksss133.txt
Building: maksssksksss669.txt
Building: maksssksksss682.txt
Building: maksssksksss696.txt
Building: maksssksksss735.txt
Building: maksssksksss721.txt
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Building: maksssksksss537.txt
Building: maksssksksss251.txt
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Building: maksssksksss292.txt
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Building: maksssksksss308.txt
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Building: maksssksksss446.txt
Building: maksssksksss452.txt
Building: maksssksksss334.txt
Building: maksssksksss485.txt
Building: maksssksksss491.txt
Building: maksssksksss678.txt
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Building: maksssksksss732.txt
Building: maksssksksss726.txt
Building: maksssksksss685.txt
Building: maksssksksss691.txt
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Building: maksssksksss652.txt
Building: maksssksksss134.txt
Building: maksssksksss108.txt
Building: maksssksksss487.txt

Building: maksssksksss493.txt
Building: maksssksksss38.txt
Building: maksssksksss444.txt
Building: maksssksksss322.txt
Building: maksssksksss336.txt
Building: maksssksksss450.txt
Building: maksssksksss478.txt
Building: maksssksksss10.txt
Building: maksssksksss11.txt
Building: maksssksksss479.txt
Building: maksssksksss337.txt
Building: maksssksksss451.txt
Building: maksssksksss445.txt
Building: maksssksksss39.txt
Building: maksssksksss323.txt
Building: maksssksksss492.txt
Building: maksssksksss486.txt
Building: maksssksksss109.txt
Building: maksssksksss653.txt
Building: maksssksksss135.txt
Building: maksssksksss121.txt
Building: maksssksksss647.txt
Building: maksssksksss848.txt
Building: maksssksksss690.txt
Building: maksssksksss684.txt
Building: maksssksksss727.txt
Building: maksssksksss733.txt
Building: maksssksksss519.txt
Building: maksssksksss243.txt
Building: maksssksksss525.txt
Building: maksssksksss531.txt
Building: maksssksksss257.txt
Building: maksssksksss280.txt
Building: maksssksksss294.txt

```
[78]: def show_bounding_boxes(image_file: str):  
    """ Auxiliary function that displays the bounding boxes of images in folder_  
    ↪<dir_path>.  
    The folder should contain both the .png images and their corresponding .  
    ↪txt annotation files.  
    The script follows the yolo format.  
    """  
  
    image = cv2.imread(image_file)  
    height, width, _ = image.shape  
    with open(image_file.split(".")[0] + '.txt', 'r') as reader:  
        bbs = reader.readlines()
```

```

for bb in bbs:
    bb = bb.split()

    # Calculation of top left point and bottom right point of the
    ↪ bounding box
    x1, y1 = int((float(bb[1]) - float(bb[3])/2)*width),
    ↪ int((float(bb[2]) - float(bb[4])/2)*height)

    x2, y2 = int((float(bb[1]) + float(bb[3])/2)*width),
    ↪ int((float(bb[2]) + float(bb[4])/2)*height)

    # BGR color format
    if bb[0] == '0':
        color = (0,255,0) # Mask is worn correctly (Green color)
        label = 'Good'
    else:
        color = (0,0,255) # Mask is either not worn correctly or not
        ↪ worn at all (Red color)
        label = 'Bad'

    font_scale = min(width, height) * 2e-3 # Adjust for larger font
    ↪ size in all images
    thickness = math.floor(min(width,height)/100)

    cv2.putText(image,
        label,
        (x1, y1 - 10),
        fontFace=cv2.FONT_HERSHEY_TRIPLEX,
        fontScale=font_scale,
        color=color,
        thickness=thickness)

    cv2.rectangle(image, (x1, y1), (x2, y2), color, thickness =
    ↪ thickness)

    image = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)
    plt.imshow(image)
    plt.show()

```

```

[79]: show_bounding_boxes('/Users/gordid/Desktop/MS_AI/Data Mining/Project/
    ↪ Dataset_853/images/maksssksksss1.png')

```

```

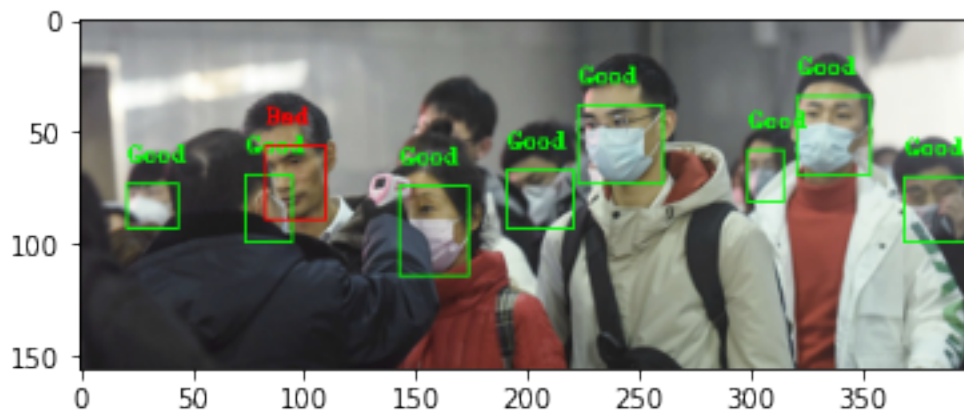
['0', '0.84375', '0.3301282051282051', '0.0825', '0.22435897435897437']
(321, 34, 354, 69)
['0', '0.60625', '0.3557692307692308', '0.0925', '0.22435897435897437']

```

```

(223, 38, 261, 73)
['0', '0.7675', '0.44551282051282054', '0.04', '0.14743589743589744']
(299, 58, 315, 81)
['0', '0.39625', '0.6057692307692307', '0.0775', '0.26282051282051283']
(143, 74, 174, 114)
['0', '0.21125', '0.5384615384615384', '0.0525', '0.19230769230769232']
(74, 69, 95, 99)
['0', '0.515', '0.5128205128205128', '0.075', '0.16666666666666666']
(191, 67, 221, 93)
['0', '0.08125', '0.532051282051282', '0.0575', '0.1282051282051282']
(21, 73, 44, 93)
['0', '0.95875', '0.5416666666666666', '0.0725', '0.1858974358974359']
(369, 70, 398, 99)
['1', '0.2425', '0.46474358974358976', '0.07', '0.21153846153846154']
(83, 56, 110, 89)

```



```
[3]: !git clone https://github.com/AlexeyAB/darknet
```

```

Cloning into 'darknet'...
remote: Enumerating objects: 15460, done.
remote: Total 15460 (delta 0), reused 0 (delta 0), pack-reused 15460
Receiving objects: 100% (15460/15460), 14.07 MiB | 13.05 MiB/s, done.
Resolving deltas: 100% (10387/10387), done.

```

```
[5]: !wget https://pjreddie.com/media/files/darknet53.conv.74 --no-check-certificate
```

```

--2022-07-27 12:11:04-- https://pjreddie.com/media/files/darknet53.conv.74
Resolving pjreddie.com (pjreddie.com)... 128.208.4.108
Connecting to pjreddie.com (pjreddie.com)|128.208.4.108|:443... connected.
WARNING: cannot verify pjreddie.com's certificate, issued by 'CN=R3,0=Let's
Encrypt,C=US':
  Issued certificate has expired.
HTTP request sent, awaiting response... 200 OK

```

Length: 162482580 (155M) [application/octet-stream]
Saving to: 'darknet53.conv.74'

darknet53.conv.74 100%[=====>] 154.96M 30.1MB/s in 5.6s

2022-07-27 12:11:10 (27.7 MB/s) - 'darknet53.conv.74' saved
[162482580/162482580]

```
[11]: !make -f "./darknet/Makefile"
```

```
mkdir -p ./obj/  
mkdir -p backup  
mkdir -p results  
chmod +x *.sh  
chmod: *.sh: No such file or directory  
make: *** [setchmod] Error 1
```

```
[26]: glob.glob('/Users/gordid/Desktop/MS_AI/Data Mining/Project/Worn_Correctly' + '/'  
↳ '*.jpg')
```

```
[26]: ['/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0015_MRCW_SRGM_0000.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0001_MRCW_SRGM_0045.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0034_MRCW_DRNV_0000.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0001_MRCW_NMDM_0000.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0001_MRCW_DRWV_0000.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0008_MRCW_NMDM_0045.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0005_MRCW_NMDM_0045.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0005_MRCW_NMDM_0090.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0008_MRCW_NMDM_0090.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0038_MRCW_SRGM_0000.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0004_MRCW_DRNV_0000.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0001_MRCW_SRGM_0090.jpg',  
'/Users/gordid/Desktop/MS_AI/Data  
Mining/Project/Worn_Correctly/0025_MRCW_SRGM_0000.jpg',
```

'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0028_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0032_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0016_MRCW_NMDM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0002_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0026_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0041_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0006_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0041_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0012_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0027_MRCW_DRNV_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0002_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0002_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0016_MRCW_NMDM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0042_MRCW_DRNV_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0019_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_DRWV_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0014_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0015_MRCW_DRNV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0039_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0034_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0009_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data

Mining/Project/Worn_Correctly/0010_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0034_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0009_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0020_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0039_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0001_MRCW_DRNV_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0015_MRCW_DRNV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0014_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0030_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0019_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0024_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0011_MRCW_DRNV_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0040_MRCW_DRWV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0033_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0006_MRCW_DRNV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0040_MRCW_NMDM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0040_MRCW_NMDM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0013_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0006_MRCW_DRNV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0017_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0003_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0040_MRCW_DRWV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0041_MRCW_SRGM_0000.jpg',

'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0006_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0022_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0027_MRCW_DRNV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0026_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0002_MRCW_NMDM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0032_MRCW_NMDM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0016_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0032_MRCW_NMDM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0002_MRCW_NMDM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0026_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0002_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0027_MRCW_DRNV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0012_MRCW_NMDM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0006_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0005_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0008_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0001_MRCW_DRWV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0038_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0001_MRCW_NMDM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0018_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0034_MRCW_DRNV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_DRNV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0025_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data

Mining/Project/Worn_Correctly/0001_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0015_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0031_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0015_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0025_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_DRNV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0001_MRCW_NMDM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0034_MRCW_DRNV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0001_MRCW_DRWV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0038_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0021_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0023_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0040_MRCW_NMDM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0013_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0023_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0006_MRCW_DRNV_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0033_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0040_MRCW_DRWV_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0003_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0003_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0033_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0007_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0013_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0010_MRCW_SRGM_0045.jpg',

'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0009_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0020_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0001_MRCW_DRNV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_NMDM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0030_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0014_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0019_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_DRWV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0042_MRCW_DRNV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0024_MRCW_NMDM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0024_MRCW_NMDM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0042_MRCW_DRNV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_DRWV_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0030_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0029_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0015_MRCW_DRNV_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0004_MRCW_NMDM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0001_MRCW_DRNV_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0039_MRCW_SRGM_0000.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0020_MRCW_SRGM_0045.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0010_MRCW_SRGM_0090.jpg',
'/Users/gordid/Desktop/MS_AI/Data
Mining/Project/Worn_Correctly/0034_MRCW_SRGM_0000.jpg']

```
[139]: def copyYOLO(image_folder, text_folder, correct = True):

    images = glob.glob(image_folder + '/*.png')

    for file in images:
        file = os.path.basename(file)
        file = file.split(".")[0] + '.txt'
        subject = str(int(file[0:4]))

        filePath = text_folder + "/Subject " + subject + "/" + file
        with open(filePath, 'r') as reader:

            bb = reader.readlines()

            if len(bb) == 1:
                bb = bb[0]
            else:
                bb = bb[2]

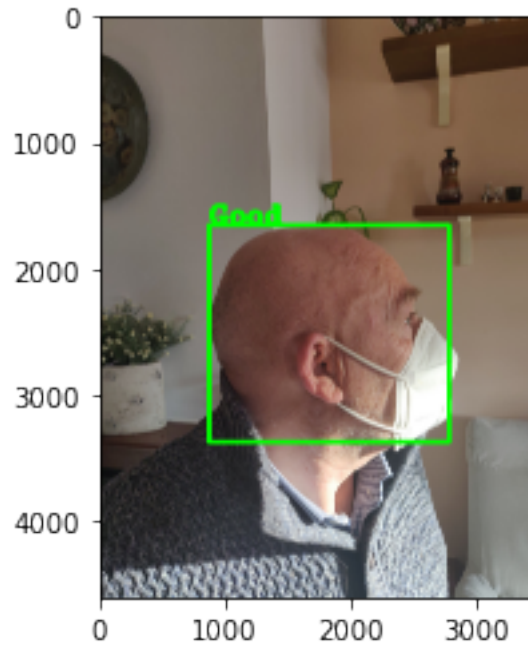
            if correct:
                bb = "0" + bb[1:]
            else:
                bb = "1" + bb[1:]

            with open(image_folder + "/" + file, "w") as writer:
                writer.write(bb)
```

```
[140]: copyYOLO('/Users/gordid/Desktop/MS_AI/Data Mining/Project/Worn_Correctly',
               '/Users/gordid/Desktop/MS_AI/Data Mining/Project/WWMR-DB - Labels/
↳Labels/YOLO', correct = True)
```

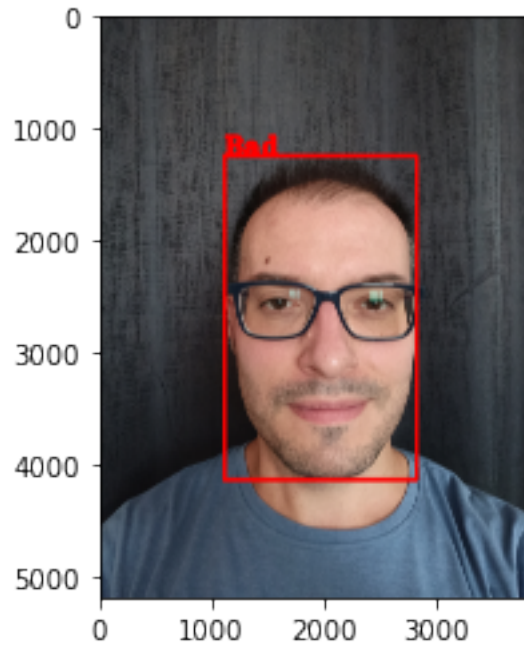
```
[142]: show_bounding_boxes('/Users/gordid/Desktop/MS_AI/Data Mining/Project/
↳Worn_Correctly/0042_MRCW_DRNV_0090.png')
```

```
['0', '0.523438', '0.546007', '0.548032', '0.372396']
(862, 1657, 2756, 3374)
```



```
[143]: copyYOLO('/Users/gordid/Desktop/MS_AI/Data Mining/Project/Not_Worn',  
              '/Users/gordid/Desktop/MS_AI/Data Mining/Project/WWMR-DB - Labels/  
              ↳Labels/YOLO', correct = False)  
  
[145]: show_bounding_boxes('/Users/gordid/Desktop/MS_AI/Data Mining/Project/Not_Worn/  
              ↳0001_MRNW_0000.png')
```

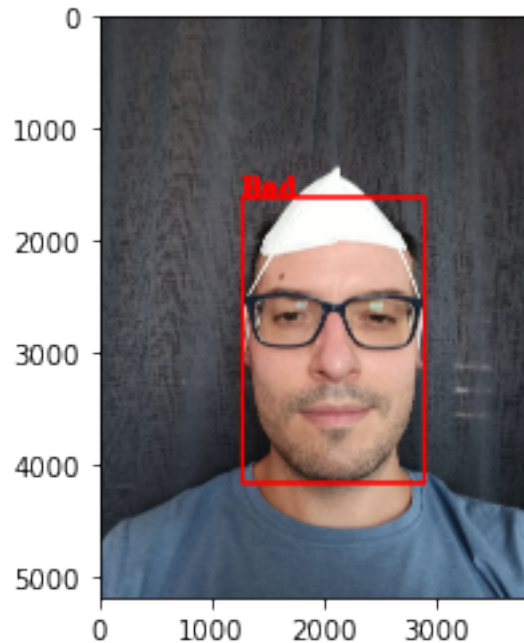
```
['1', '0.507345', '0.518904', '0.441495', '0.556327']  
(1111, 1247, 2824, 4131)
```



```
[146]: copyYOLO('/Users/gordid/Desktop/MS_AI/Data Mining/Project/Worn_Incorrectly',  
               '/Users/gordid/Desktop/MS_AI/Data Mining/Project/WWMR-DB - Labels/  
               ↳Labels/YOLO', correct = False)
```

```
[147]: show_bounding_boxes('/Users/gordid/Desktop/MS_AI/Data Mining/Project/  
               ↳Worn_Incorrectly/0001_MRFH_DRNV_0000.png')
```

```
['1', '0.536856', '0.556906', '0.418041', '0.490741']  
(1272, 1615, 2894, 4159)
```



```
[148]: source = '/Users/gordid/Desktop/MS_AI/Data Mining/Project/Worn_Incorrectly'
destination = '/Users/gordid/Desktop/MS_AI/Data Mining/Project/All_data2/'
for file in os.listdir(source):
    shutil.copy2(os.path.join(source, file), destination)
```

```
[149]: source = '/Users/gordid/Desktop/MS_AI/Data Mining/Project/Worn_Correctly'
destination = '/Users/gordid/Desktop/MS_AI/Data Mining/Project/All_data2/'
for file in os.listdir(source):
    shutil.copy2(os.path.join(source, file), destination)
```

```
[150]: source = '/Users/gordid/Desktop/MS_AI/Data Mining/Project/Not_Worn'
destination = '/Users/gordid/Desktop/MS_AI/Data Mining/Project/All_data2/'
for file in os.listdir(source):
    shutil.copy2(os.path.join(source, file), destination)
```

```
[151]: source = '/Users/gordid/Desktop/MS_AI/Data Mining/Project/Dataset_853/images'
destination = '/Users/gordid/Desktop/MS_AI/Data Mining/Project/All_data2/'
for file in os.listdir(source):
    shutil.copy2(os.path.join(source, file), destination)
```


0.1 Rearrange Files

```
[161]: files = glob.glob('/Users/gordid/Desktop/MS_AI/Data Mining/Project/All_data2/' +
    ↪+ '/*.txt')
destination = '/Users/gordid/Desktop/MS_AI/Data Mining/Project/Data_text'
for file in files:
    shutil.move(file, os.path.join(destination, os.path.basename(file)))
```

0.2 How many bounding boxes for each class?

```
[156]: files = glob.glob('/Users/gordid/Desktop/MS_AI/Data Mining/Project/All_data2/' +
    ↪+ '/*.txt')
bb_classes = []
for file in files:
    with open(file, 'r') as reader:
        bbs = reader.readlines()
        for bb in bbs:
            bb_classes.append(bb[0])
```

```
[157]: print(bb_classes.count("0"))
print(bb_classes.count("1"))
```

3384

1650

```
[ ]:
```

0.3 Create Test and Training Set

```
[162]: num_images = len(glob.glob('/Users/gordid/Desktop/MS_AI/Data Mining/Project/
    ↪Data_text/' + '/*.txt'))
num_images
```

[162]: 1815

```
[166]: from sklearn.model_selection import train_test_split
```

```
[172]: from sklearn.model_selection import train_test_split
a = os.listdir('/Users/gordid/Desktop/MS_AI/Data Mining/Project/Data_text/')
tr, te = train_test_split(a, test_size = 0.2)
len(tr)
```

[172]: 1452

```
[174]: !pip3 install torchvision
```

```

Collecting torchvision
  Downloading torchvision-0.13.0-cp37-cp37m-macosx_10_9_x86_64.whl (1.3 MB)
    |                               | 1.3 MB 2.1 MB/s eta 0:00:01
Collecting torch==1.12.0
  Downloading torch-1.12.0-cp37-none-macosx_10_9_x86_64.whl (137.5 MB)
    |                               | 137.5 MB 11.3 MB/s eta 0:00:01
    |                               | 44.1 MB 11.9 MB/s eta 0:00:08
Requirement already satisfied: typing-extensions in
/Users/gordid/anaconda3/lib/python3.7/site-packages (from torchvision) (4.1.1)
Requirement already satisfied: numpy in
/Users/gordid/anaconda3/lib/python3.7/site-packages (from torchvision) (1.21.5)
Requirement already satisfied: pillow!=8.3.*,>=5.3.0 in
/Users/gordid/anaconda3/lib/python3.7/site-packages (from torchvision) (9.0.1)
Requirement already satisfied: requests in
/Users/gordid/anaconda3/lib/python3.7/site-packages (from torchvision) (2.27.1)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in
/Users/gordid/anaconda3/lib/python3.7/site-packages (from requests->torchvision)
(1.26.9)
Requirement already satisfied: idna<4,>=2.5 in
/Users/gordid/anaconda3/lib/python3.7/site-packages (from requests->torchvision)
(3.3)
Requirement already satisfied: charset-normalizer~=2.0.0 in
/Users/gordid/anaconda3/lib/python3.7/site-packages (from requests->torchvision)
(2.0.4)
Requirement already satisfied: certifi>=2017.4.17 in
/Users/gordid/anaconda3/lib/python3.7/site-packages (from requests->torchvision)
(2022.6.15)
Installing collected packages: torch, torchvision
Successfully installed torch-1.12.0 torchvision-0.13.0

```

```
[175]: import torch
```

```
[178]: os.chdir("/Users/gordid/Desktop/MS_AI/Data Mining/Project/")
```

```
[179]: !git clone https://github.com/ultralytics/yolov5 # clone
```

```

Cloning into 'yolov5'...
remote: Enumerating objects: 12440, done.
remote: Counting objects: 100% (40/40), done.
remote: Compressing objects: 100% (36/36), done.
remote: Total 12440 (delta 21), reused 14 (delta 4), pack-reused 12400
Receiving objects: 100% (12440/12440), 12.42 MiB | 8.26 MiB/s, done.
Resolving deltas: 100% (8520/8520), done.

```

```
[180]: %cd yolov5
```

```
/Users/gordid/Desktop/MS_AI/Data Mining/Project/yolov5
```

```
[181]: %pip install -qr requirements.txt # install requirements
```

Note: you may need to restart the kernel to use updated packages.

```
[182]: from yolov5 import utils
```

```
[191]: !python detect.py --weights last.pt --img 640 --conf 0.5 --source "/Users/  
↳gordid/Desktop/Danya_Mask.mov"
```

```
detect: weights=['last.pt'],  
source=/Users/gordid/Desktop/Danya_Mask.mov, data=data/coco128.yaml, imgsz=[640,  
640], conf_thres=0.5, iou_thres=0.45, max_det=1000, device=, view_img=False,  
save_txt=False, save_conf=False, save_crop=False, nosave=False, classes=None,  
agnostic_nms=False, augment=False, visualize=False, update=False,  
project=runs/detect, name=exp, exist_ok=False, line_thickness=3,  
hide_labels=False, hide_conf=False, half=False, dnn=False  
fatal: cannot change to '/Users/gordid/Desktop/MS_AI/Data': No such file or  
directory  
YOLOv5 2022-8-3 Python-3.7.7 torch-1.12.0 CPU
```

Fusing layers...

```
Model summary: 213 layers, 7015519 parameters, 0 gradients, 15.8 GFLOPs  
video 1/1 (1/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct, Done.  
(0.097s)  
video 1/1 (2/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct, Done.  
(0.097s)  
video 1/1 (3/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct, Done.  
(0.096s)  
video 1/1 (4/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct, Done.  
(0.095s)  
video 1/1 (5/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct, Done.  
(0.095s)  
video 1/1 (6/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct, Done.  
(0.103s)  
video 1/1 (7/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct, Done.  
(0.097s)  
video 1/1 (8/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct, Done.  
(0.093s)  
video 1/1 (9/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct, Done.  
(0.086s)  
video 1/1 (10/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,  
Done. (0.084s)  
video 1/1 (11/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,  
Done. (0.084s)  
video 1/1 (12/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,  
Done. (0.085s)  
video 1/1 (13/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,  
Done. (0.091s)
```

video 1/1 (14/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.085s)
 video 1/1 (15/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.085s)
 video 1/1 (16/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.086s)
 video 1/1 (17/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.096s)
 video 1/1 (18/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.094s)
 video 1/1 (19/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.095s)
 video 1/1 (20/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.085s)
 video 1/1 (21/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.084s)
 video 1/1 (22/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.084s)
 video 1/1 (23/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.090s)
 video 1/1 (24/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.093s)
 video 1/1 (25/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.093s)
 video 1/1 (26/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.088s)
 video 1/1 (27/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.086s)
 video 1/1 (28/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Correct,
 Done. (0.085s)
 video 1/1 (29/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.085s)
 video 1/1 (30/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.084s)
 video 1/1 (31/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.087s)
 video 1/1 (32/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.084s)
 video 1/1 (33/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.085s)
 video 1/1 (34/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.087s)
 video 1/1 (35/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.102s)
 video 1/1 (36/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.087s)
 video 1/1 (37/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.086s)

video 1/1 (38/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.085s)
video 1/1 (39/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.084s)
video 1/1 (40/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.101s)
video 1/1 (41/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.094s)
video 1/1 (42/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.086s)
video 1/1 (43/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.085s)
video 1/1 (44/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.085s)
video 1/1 (45/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.084s)
video 1/1 (46/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.085s)
video 1/1 (47/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.087s)
video 1/1 (48/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.085s)
video 1/1 (49/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.089s)
video 1/1 (50/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.089s)
video 1/1 (51/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.097s)
video 1/1 (52/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.099s)
video 1/1 (53/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.091s)
video 1/1 (54/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.088s)
video 1/1 (55/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.086s)
video 1/1 (56/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.084s)
video 1/1 (57/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.090s)
video 1/1 (58/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.085s)
video 1/1 (59/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.092s)
video 1/1 (60/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.087s)
video 1/1 (61/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.083s)

video 1/1 (62/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.087s)
video 1/1 (63/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.099s)
video 1/1 (64/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.091s)
video 1/1 (65/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.094s)
video 1/1 (66/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.091s)
video 1/1 (67/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.097s)
video 1/1 (68/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.100s)
video 1/1 (69/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.151s)
video 1/1 (70/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.096s)
video 1/1 (71/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.097s)
video 1/1 (72/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.108s)
video 1/1 (73/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.094s)
video 1/1 (74/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.093s)
video 1/1 (75/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.097s)
video 1/1 (76/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.098s)
video 1/1 (77/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.093s)
video 1/1 (78/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.087s)
video 1/1 (79/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.086s)
video 1/1 (80/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
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video 1/1 (81/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.094s)
video 1/1 (82/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.096s)
video 1/1 (83/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.094s)
video 1/1 (84/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.086s)
video 1/1 (85/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.082s)

video 1/1 (86/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.088s)
video 1/1 (87/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.084s)
video 1/1 (88/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.084s)
video 1/1 (89/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.094s)
video 1/1 (90/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.092s)
video 1/1 (91/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.091s)
video 1/1 (92/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.101s)
video 1/1 (93/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.107s)
video 1/1 (94/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.102s)
video 1/1 (95/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.099s)
video 1/1 (96/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.101s)
video 1/1 (97/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.096s)
video 1/1 (98/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.090s)
video 1/1 (99/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.089s)
video 1/1 (100/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.088s)
video 1/1 (101/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.089s)
video 1/1 (102/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.091s)
video 1/1 (103/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.091s)
video 1/1 (104/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
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video 1/1 (105/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.100s)
video 1/1 (106/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.097s)
video 1/1 (107/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.097s)
video 1/1 (108/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.096s)
video 1/1 (109/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
Done. (0.094s)

video 1/1 (110/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.097s)
 video 1/1 (111/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.099s)
 video 1/1 (112/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.095s)
 video 1/1 (113/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.095s)
 video 1/1 (114/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.093s)
 video 1/1 (115/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.097s)
 video 1/1 (116/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.100s)
 video 1/1 (117/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.096s)
 video 1/1 (118/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.098s)
 video 1/1 (119/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.097s)
 video 1/1 (120/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.095s)
 video 1/1 (121/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.092s)
 video 1/1 (122/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
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 video 1/1 (123/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.089s)
 video 1/1 (124/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.089s)
 video 1/1 (125/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.088s)
 video 1/1 (126/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.086s)
 video 1/1 (127/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.086s)
 video 1/1 (128/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.087s)
 video 1/1 (129/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.094s)
 video 1/1 (130/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.088s)
 video 1/1 (131/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.096s)
 video 1/1 (132/132) /Users/gordid/Desktop/Danya_Mask.mov: 384x640 1 Incorrect,
 Done. (0.096s)
 Speed: 0.5ms pre-process, 91.9ms inference, 0.5ms NMS per image at shape (1, 3,
 640, 640)

Results saved to runs/detect/exp7

[]: