HELMET DETECTION

ANNOTATION CLASSES:
- driver_with_automobile_helmet
- driver_without_automobile_helmet
- driver_with_bare_head

- non_driver_with_automobile_helmet
- non_driver_without_automobile_helmet
- non_driver_with_bare_head

- Just_ automobile_helmet
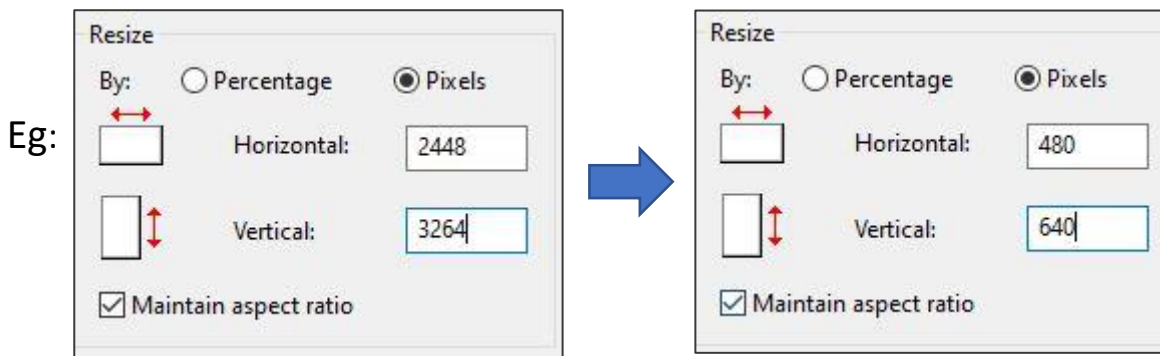- Just_ non_automobile_helmet

VARIATIONS:
- with_automobile_helmet
    1. Bike helmet
        - Full face helmet
        - Half helmet (Skull cap helmet)
        - Off-road helmet
        - Three quarter helmet
        - Dual sport helmet
        - Modular helmet

- without_automobile_helmet
    1. Cap
    2. Scarf bandana
    3. Sikh turban
    4. Cycle helmet
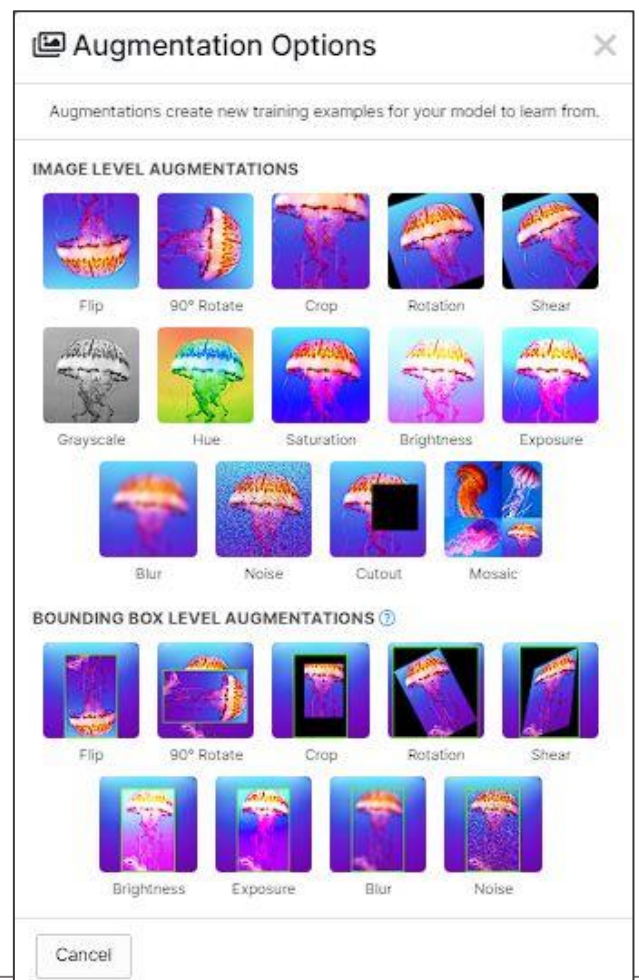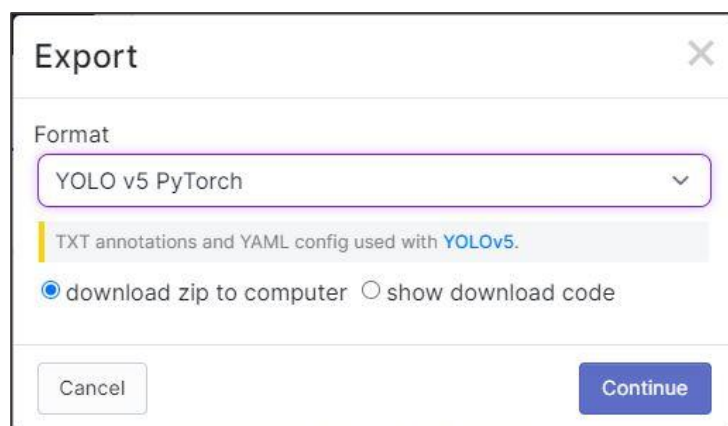   5. Construction helmet
    6. Welding helmet

- with_bare_head
  1. With hair
  2. Bald head

- Just_ automobile_helmet
  1. Bike helmet
     - Full face helmet
     - Half helmet (Skull cap helmet)
     - Off-road helmet
     - Three quarter helmet
     - Dual sport helmet
     - Modular helmet

- Just_ non_automobile_helmet
  1. Cap
  2. Scarf bandana
  3. Sikh turban
  4. Cycle helmet
  5. Construction helmet
  6. Welding helmet

REQUIREMENTS:

1. Image capturing – Only "Potrait" selfie images. Maintain selfies at this zoom level

2. Image resolution – Capture at those particular pixel size, when resizing (keeping the aspect ratio enabled) the pixel should be 480 x 640

3. Use resized 480 x 640 images for segmentation in roboflow

Eg:

Resize

By: ○ Percentage   ● Pixels

↔

Horizontal: 2448

↕ Vertical: 3264

☑ Maintain aspect ratio

→

Resize

By: ○ Percentage   ● Pixels

↔

Horizontal: 480

↕ Vertical: 640

☑ Maintain aspect ratio

4. If possible use Augmentation options like "rotation", "rotate by angle", "shear" etc, before zipping it

5. Export by zipping it under the format "YOLO v5 PyTorch"

Export   ×

Format

YOLO v5 PyTorch   ⌄

TXT annotations and YAML config used with **YOLOv5**.

● download zip to computer   ○ show download code

Cancel   Continue

🖼 Augmentation Options   ×

Augmentations create new training examples for your model to learn from.

IMAGE LEVEL AUGMENTATIONS

Flip   90° Rotate   Crop   Rotation   Shear

Grayscale   Hue   Saturation   Brightness   Exposure

Blur   Noise   Cutout   Mosaic

BOUNDING BOX LEVEL AUGMENTATIONS ⑦

Flip   90° Rotate   Crop   Rotation   Shear

Brightness   Exposure   Blur   Noise

Cancel

BUFIRCATION DETAILS:
- Selfies by male and female
- Helmet with different colors
- Lighting conditions - Sunlight, dawn, dusk, twilight, etc
- Indoor and outdoors
- With rain
- Selfies with helmet visor (tinted glass or non-tinted glass shield) opened, closed, half opened, etc
- Selfie zone →
- Racial selection: Indians only

Home
•   Isolated selfie
Crowded place
•   Office
•   School
•   Hospital etc…..

HELMET TYPES:

1 Full-Face

True-blue motorcyclists swear by full-face helmets, and for good reason. These helmets protect your entire head and face, which makes them the safest among all helmet types. On the downside, this also makes them heavy.

2 Half

Half helmets cover the top and back part of your head. The absence of a jaw and rear section makes these helmets significantly lighter than full-face ones. This style offers the lowest level of protection.

3 Off-Road

These helmets are primarily meant for motorcyclists who are into intense off-road riding. The main purpose of off-road helmets is to provide better ventilation, which explains their lighter weight and airy design.

4 Three-Quarter

Commonly confused with half-face helmets, three-quarter helmets cover everything except the rider's face. Motorcyclists who need a helmet for short distance riding within the city may opt for this helmet.

5 Dual-Sport

Dual-sport helmets combine the best of highway and off-road helmets. They are lighter than normal full-face helmets and offer better visibility as well. Dual-sports are perfect for riders who go off-road occasionally.

6 Modular

As apparent from their name, modular helmets can function either as full-face or three-quarter helmets. They are also known as flip-up helmets and are preferred for the flexibility they offer.
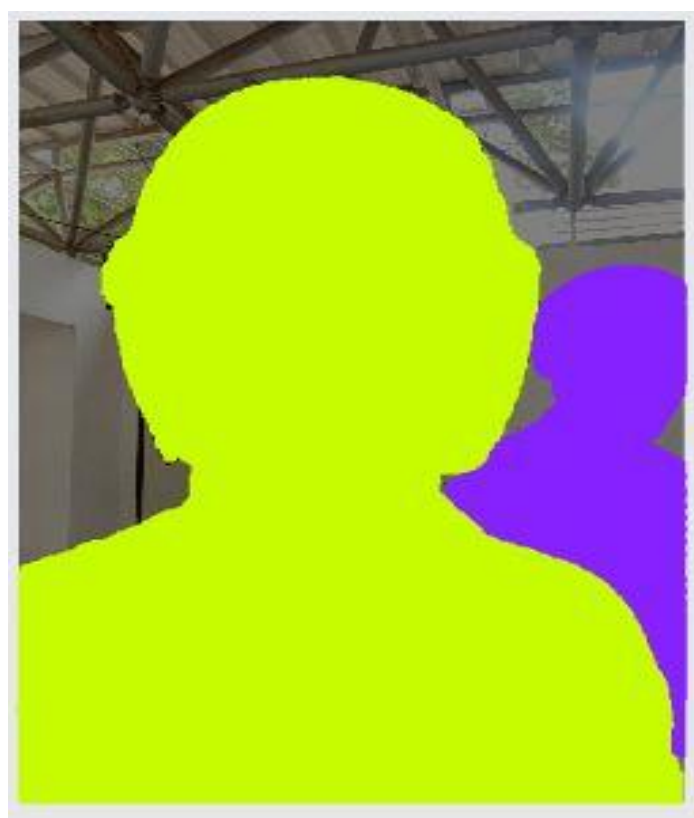
driver_with_automobile_helmet:

driver_without_automobile_helmet:
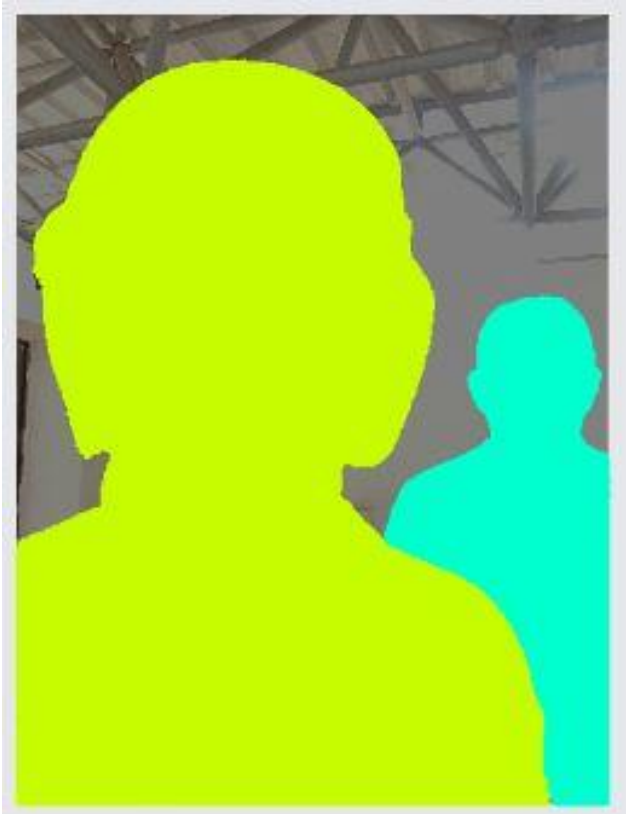
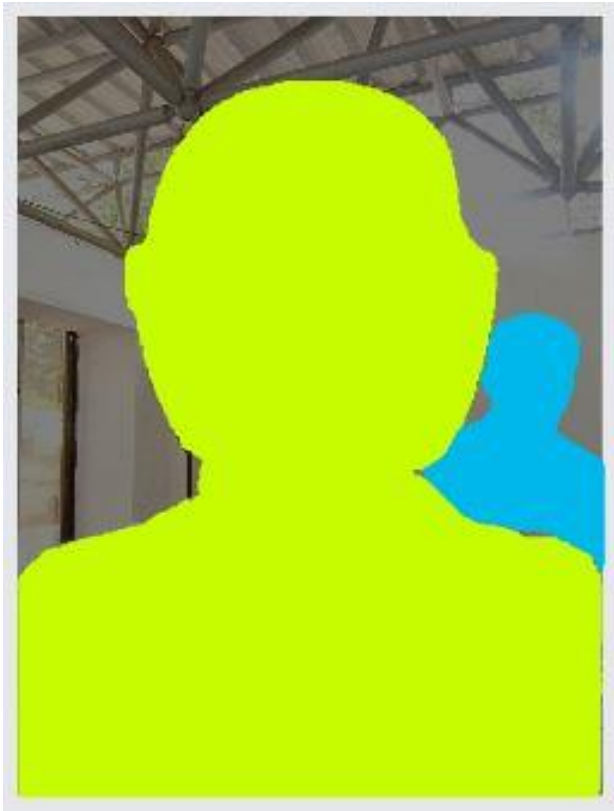driver_with_bare_head:

non_driver_with_automobile_helmet:

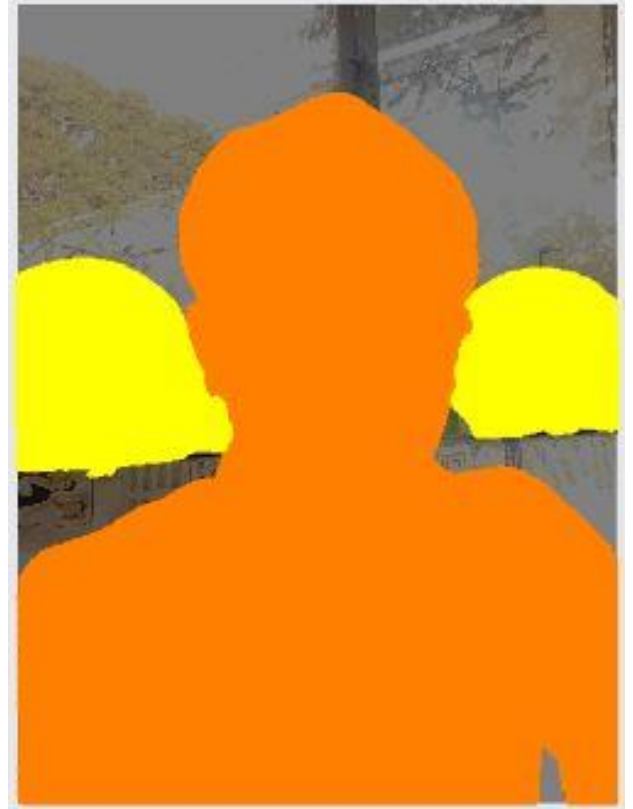# non_driver_without_automobile_helmet:

non_driver_with_bare_head:

Just_automobile_helmet:

Just_non_automobile_helmet: