**YOLOV4 Training Setup Using Colab and Gdrive.**

1: Data Annotation Using image labeling tools in yolo format

<object-class> <x\_center> <y\_center> <width> <height>

2: Resize all the training data in same size.(for yolov4 608px by 608px or multiple of 32)

3: Put all the images and their labels file in the same folder. Such as “abc11.jpg” , “abc11.txt” .

4:Mount your google drive with google colab notebook.

5: Clone the darknet repository into your google drive using colab.

!git clone <https://github.com/AlexeyAB/darknet>

6: Upload all the images and labels into “darknet/data/obj” folder.

7: Divide your data into training and validation Dataset. Training=90% , Validation = 10%.

8: In “darknet/data/obj” folder open the obj.names files and add your labels names.

Such as 0:Person, 1:Cars

9: In “darknet/data/obj” folder open the obj.names files and change the number of classes according to your classes and give the path of train, valid datasets, names file and backup folder.

classes = 4

train = data/train.txt

valid = data/test.txt

names = data/obj.names

backup = backup

10: Download the yolov4 weight file into your darknet folder.

11: Edit your custom yolo configuration file.

* For training cfg/yolov4-custom.cfg download the pre-trained weights-file (162 MB)
* Create file yolo-obj.cfg with the same content as in yolov4-custom.cfg (or copy yolov4-custom.cfg to yolo-obj.cfg) and:
* change line batch to [batch=64](https://github.com/AlexeyAB/darknet/blob/0039fd26786ab5f71d5af725fc18b3f521e7acfd/cfg/yolov3.cfg" \l "L3)
* change line subdivisions to [subdivisions=6](https://github.com/AlexeyAB/darknet/blob/0039fd26786ab5f71d5af725fc18b3f521e7acfd/cfg/yolov3.cfg" \l "L4)4
* change line max\_batches to (classes\*2000 but not less than number of training images, but not less than number of training images and not less than 8000), f.e. [max\_batches=8000](https://github.com/AlexeyAB/darknet/blob/0039fd26786ab5f71d5af725fc18b3f521e7acfd/cfg/yolov3.cfg" \l "L20) if you train for 4 classes
* change line steps to 80% and 90% of max\_batches.
* set network size width=608 height=608 or any value multiple of 32:
* change line classes=80 to your number of objects in each of 3 [yolo]-layers:
* change [filters=255] to filters=(classes + 5)x3 in the 3 [convolutional] before each [yolo] layer, keep in mind that it only has to be the last [convolutional] before each of the [yolo] layers.
* Download pre-trained weights for the convolutional layers and put to the directory build\darknet
* To train use command: ./darknet detector train data/obj.data yolo-custom.cfg yolov4.conv.137  -dont\_show -map

12: After every 100 iteration a backup file will be saved into your backup folder

13: If training will be stopped you can continue the training by using your backup weight file.

* To continue training use command: ./darknet detector train data/obj.data yolo-custom.cfg backup/yolov4-custom\_last.weights -dont\_show -map.