Data Preparation

* Label the images using LabelImg software.
* Each image will be stored in .xml format.
* Place both image and .xml file in the same folder.
* For Installing LabelImg follow below link
  + https://github.com/tzutalin/labelImg

Installations

* Clone the repository <https://github.com/avi268/TensorFlow-2.x-YOLOv3> and install the following
* pip install -r ./requirements.txt

# yolov3

* wget -P model\_data <https://pjreddie.com/media/files/yolov3.weights>
* If above command is not working download yolov3 weights from above link manually and place it in model\_data folder.

Process with your own data or custom data

* Once above installations are completed.
* Prepare your data with help of LabelImg as mentioned.
* Keep both your images and .xml files in same path.
* Then split that data into train and test folders.
* Ex: Total 100 images and 100 .xml files
  + Train Folder – 80 images and their respective .xml files(80)
  + Test Folder – 20images and their respective .xml files(20)
* Now we need to convert from xml to yolov3 format.
* For that case we need to work on some path changes in **XML\_to\_YOLOv3.py** file.
* data\_dir = '/custom\_Images/'
  + In place of custom\_Images you mention your own path where you have both train and test folders of images and .xml files.
* Dataset\_names\_path = "model\_data/custom \_names.txt"
  + In place of custome\_names.txt, change it to a suitable name of your comfort.
* Dataset\_train = "model\_data/custom\_train.txt"
  + In place of custom\_train.txt, change it to a suitable name of your comfort.
* Dataset\_test = "model\_data/custom\_test.txt"
  + In place of custom\_test.txt, change it to a suitable name of your comfort.
* is\_subfolder = False
  + Mention True if you have more subfolders inside the train and test folders.
* Once above changes are done, run the XML\_to\_YOLOv3.py
* New files with the changed names will be created in model\_data folder.
* **Configs.py**
  + Changes in configs.py
* TRAIN\_CLASSES               = "./model\_data/custom\_names.txt"
* TRAIN\_ANNOT\_PATH            = "./model\_data/custom\_train.txt"
* TEST\_ANNOT\_PATH             = "./model\_data/custom\_test.txt"
  + Change custom\_names.txt, custom\_train.txt and custom\_test.txt to the names that you mentioned.
* YOLO\_CUSTOM\_WEIGHTS         = True
  + Make sure YOLO\_CUSTOM\_WEIGHTS = TRUE when you are working with custom data.
* Once changes are done to Configs.py
* Run **train.py** to start training the custom data with yolov3.
* Once training is done run **detection\_custom.py** with any test data you have

for img in os.listdir('./New\_Images/')

* + In place of that New\_Images you can mention your path where you have your own images to detect.

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