**Yolo V3 Installation Process and User Steps**

**NOTE: Yolo V3 can be downloaded and run on Windows but since we’re using it with a ROS environment you must have a Linux environment i.e. Ubuntu. 18.04**

1. Boot up VM:
   1. Turn on your Virtual Machine or boot up Linux and open your shell terminal
   2. Type in, “sudo apt-get update” in order to update the libraries
2. Cuda enabled:
   1. In the Shell:
      1. export PATH=/usr/local/cuda-10.0/bin${PATH:+:${PATH}}
      2. export LD\_LIBRARY\_PATH=/usr/local/cuda-10.0/lib64${LD\_LIBRARY\_PATH:+:${LD\_LIBRARY\_PATH}}
3. Download Darknet and Yolo V3:
   1. In order to download and install Yolo V3 we need to get the right packages for the tool installed in Linux. AlexeyAB’s Github was recommended by many video tutorials
   2. Type in shell:
      1. git clone https://github.com/AlexeyAB/darknet
      2. cd darknet
      3. wget https://pjreddie.com/media/files/yolov3.weights
      4. wget https://pjreddie.com/media/files/yolov3-tiny.weights
   3. installing these packages above gives you the pre-trained “weights” or model which does the object labeling and detection
4. Enabling GPU:
   1. We need to edit the Makefile to enable the GPU, Cuda, and OpenCV
   2. Type in shell:
      1. sudo vi Makefile
   3. Set the values:  
      GPU=1  
      CUDNN=1  
      OPENCV=1  
      and the rest leave it as it is.
5. Compile the Darknet
   1. Type in shell:
      1. Make
6. Running Yolo V3:
   1. You can run Yolo from the Linux terminal. Once you open the terminal you need first to access the Darknet folder. So just type: cd darknet
   2. Image Detection – Add the path file to end of line below
      1. ./darknet detector test cfg/coco.data yolov3.cfg yolov3.weights -ext\_output **Pathfile/test.jpg**
   3. Detection from a Webcam
      1. ./darknet detector demo cfg/coco.data cfg/yolov3.cfg yolov3.weights -c
   4. Detection from a video file – Add the path file to end of line below (MP4)
      1. ./darknet detector demo cfg/coco.data cfg/yolov3.cfg yolov3.weights -ext\_output **Pathfile/test.mp4**
7. Installation tutorial video reference and other links:
   1. <https://www.youtube.com/watch?time_continue=885&v=K03WZyee6ig&feature=emb_title>
   2. <https://towardsdatascience.com/getting-your-machine-ready-to-use-yolov3-object-detector-on-ubuntu-18-04-185799ebc18d>
   3. <https://github.com/AlexeyAB/darknet>