Project Objectives

Date	12 November 2022
Team ID	PNT2022TMID03921
Project Name	Virtual Eye - Life Guard For Swimming Pools To Detect Active Drowning
Maximum Marks	4 Marks

YOLOv3:

➢ YOLOv3 (You Only Look Once, Version 3) is **a real-time object detection algorithm that identifies specific objects in videos, live feeds, or images**.

➢ The YOLO machine learning algorithm uses features learned by a deep convolutionalneural network to detect an object.

Method	mAP	time
[B] SSD321	28.0	61
[C] DSSD321	28.0	85
[D] R-FCN	29.9	85
[E] SSD513	31.2	125
[F] DSSD513	33.2	156
[G] FPN FRCN	36.2	172
RetinaNet-50-500	32.5	73
RetinaNet-101-500	34.4	90
RetinaNet-101-800	**37.8**	198
YOLOv3-320	28.2	**22**
YOLOv3-416	31.0	29
YOLOv3-608	33.0	51
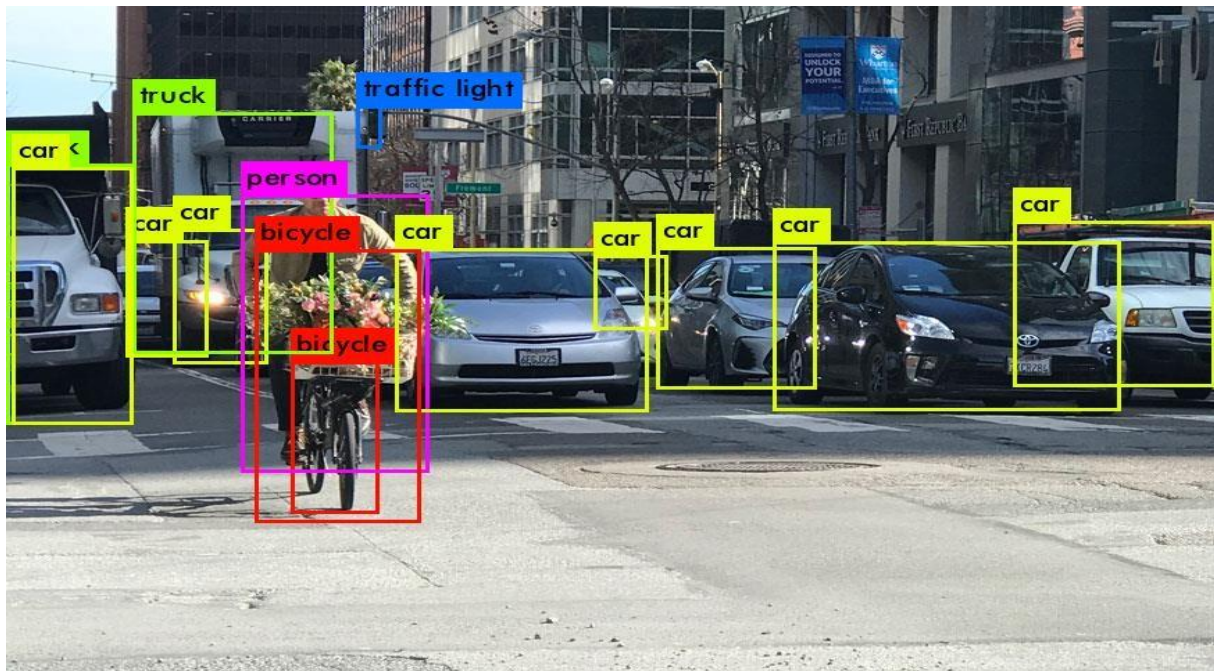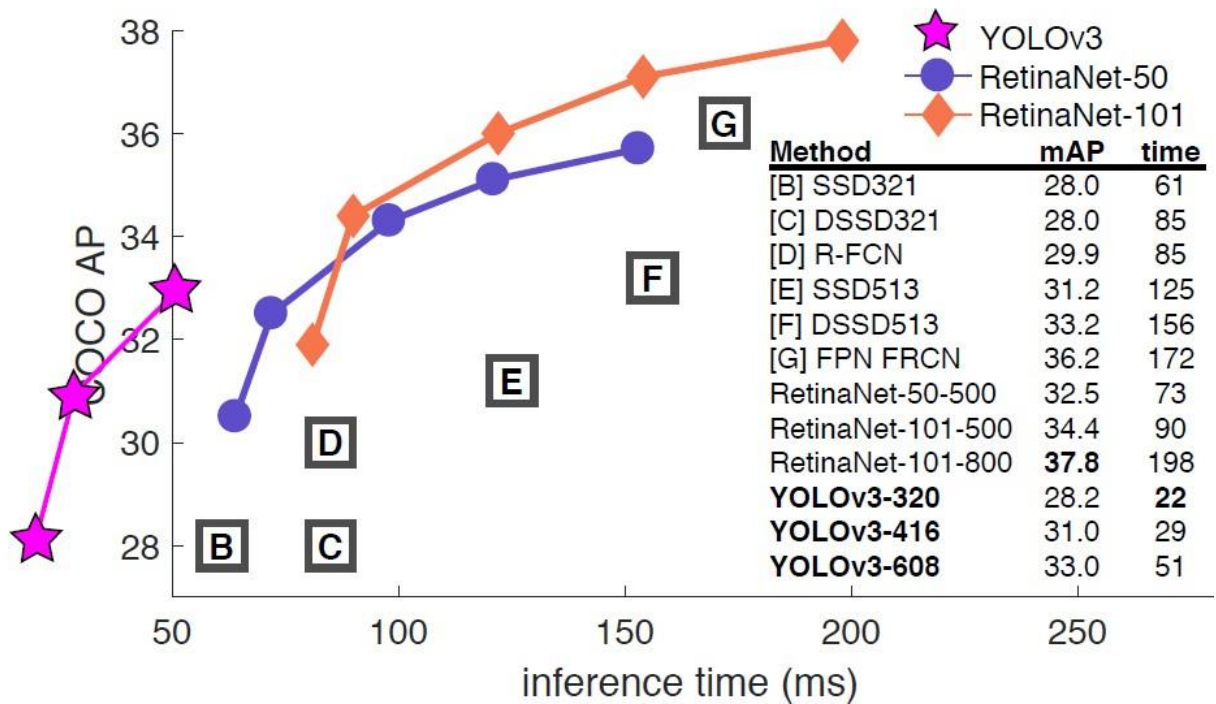
➢ YOLOv3 runs much faster than previous detection methods with a comparable performance using an M40/Titan X GPU

https://viso.ai/deep-learning/yolov3-overview/

How to train a YOLO model in a windows environment:

1. Image Collection
2. Image Selection (How to choose a proper set of images to train YOLO)
3. Annotate Image
4. Download and configure Darknet in Windows
5. Create Train and Test Data to train YOLO model
6. Compile darknet on Windows
7. Train YOLO custom object detection model in Windows
8. Test YOLO model for image and video