Weapon Detection using Artificial Intelligence and Deep Learning for Security Applications Levels

The second presentation

About us!

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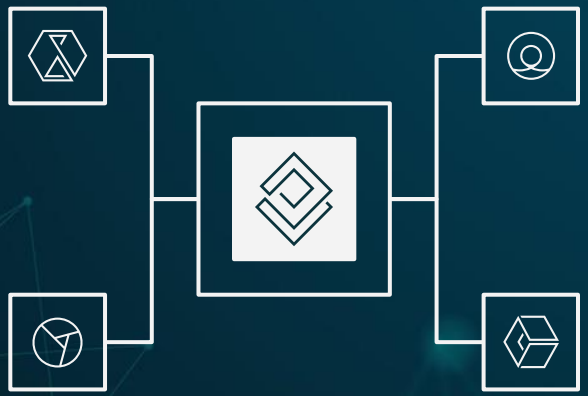
PROJECT PRESENTATION

- Weapon Detection using Artificial Intelligence and Deep Learning for Security Applications Levels



PART ONE(50%)

PART ONE CONSIST OF
A MOVING ROVER DRONE

WEAPON DETECTING DRONE WITH OBJECT DETECTION

PART 3 (100%)

PART TWO(80%)

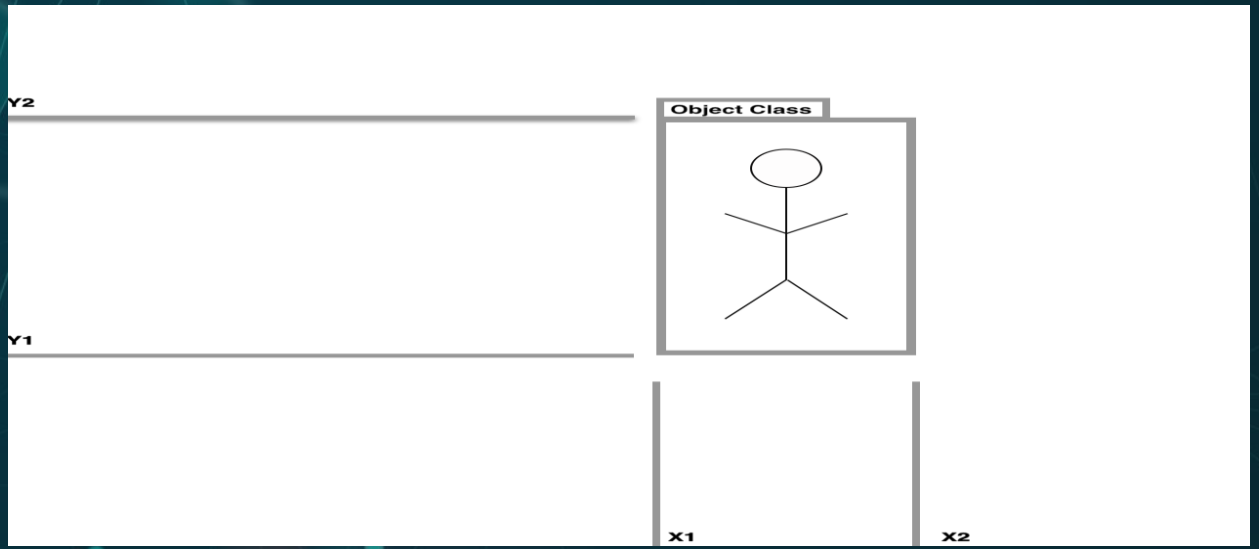
PART TWO CONSIST OF IMPLIMENTATION OF OBJECT DETECTION

About yolo v5

- YOLOv5 is a recent release of the YOLO family of models.
- YOLO was initially introduced as the first obj detection model that combined bounding box prediction and object classification into a single end to end differentiable network.
- It was written and is maintained in a framework called Darknet.
- YOLOv5 is the first of the YOLO models to be written in the PyTorch framework and it is much more lightweight and easy to use.
- That said, YOLOv5 did not make major architectural changes to the network in YOLOv4 and does not outperform YOLOv4 on a common benchmark, the COCO dataset.
- Git hub repo: yolov5

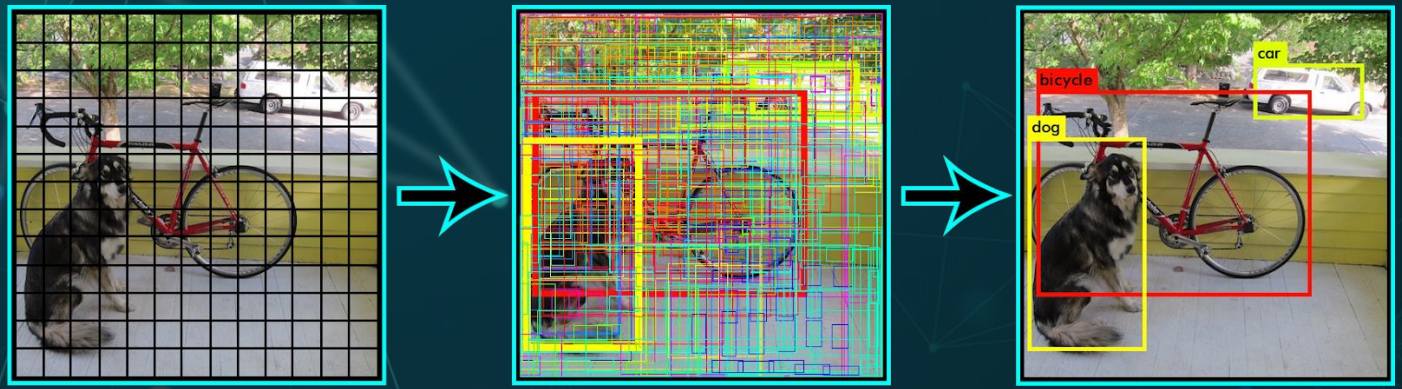
How yolov5 works

1. Our object detector model will separate the bounding box regression from object classifications in different areas of a connected network.
2.

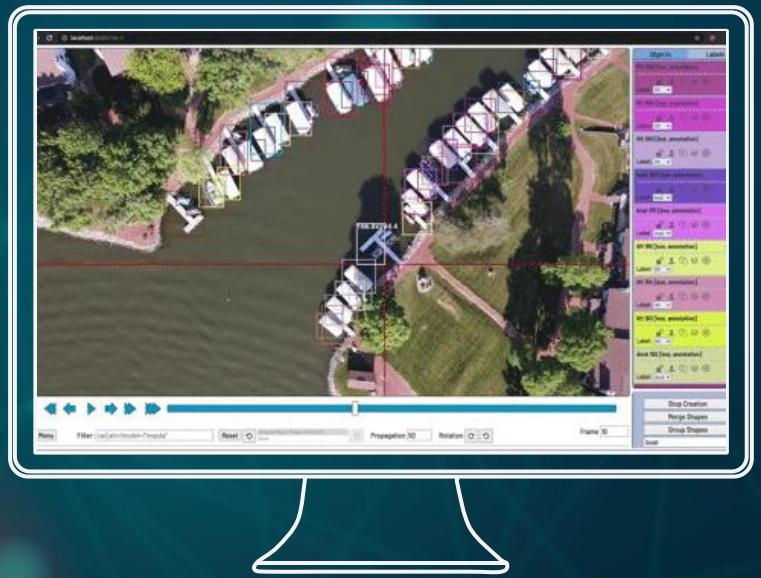


How yolov5 works

1. The YOLO algorithm works by dividing the image into *N* grids, each having an equal dimensional region of SxS. Each of these *N* grids is responsible for the detection and localization of the object it contains.



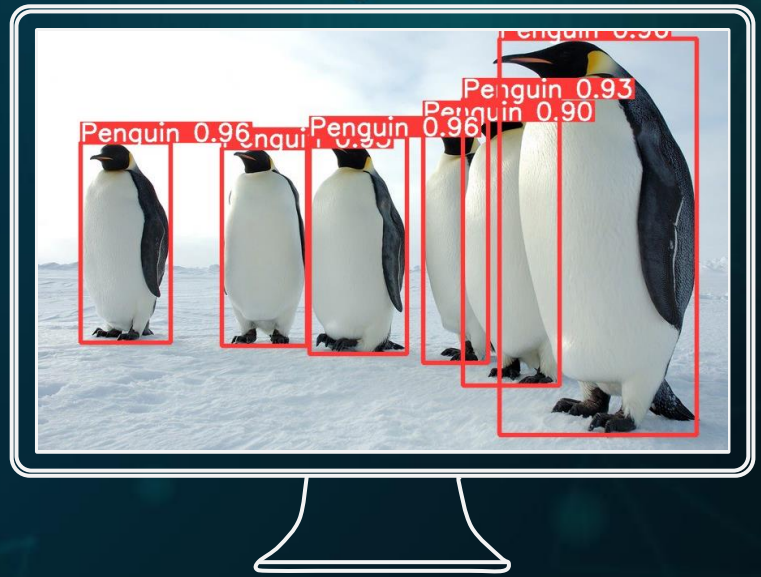
Collecting Our Training Images



- narrowing your task to only identify **10 or less classes** and collecting **50–100 images**.
- try to make sure that the number of objects in each class is evenly distributed.
- choose objects that are distinguishable. A dataset of mostly cars and only a few jeeps for example will be difficult for your model to master.

Result


person 0.99
bicycle 0.95


Penguin 0.96
Penguin 0.96
Penguin 0.93
Penguin 0.90

Project status

0%

Searching for the base paper

Implimentation of rover drone

50%

80%

Implimentation of yolov5 algorithm

Project status 100%,moving object detection rover drone

100%

Report

Report submission

Conclusion

We implemented the yolo algorithm and it run successfully with out any error

- We have gained an overview of object detection and the YOLO algorithm.
- We have gone through the main reasons why the YOLO algorithm is important.
- We have learned how the YOLO algorithm works. We have also gained an understanding of the main techniques used by YOLO to detect objects.
- We have learned the real-life applications of YOLO.

Thank you.

Any questions ?