كلية الحاسبات والذكاء الإصطناعي
Faculty of Computers & Artificial Intelligence

CS 395 Selected Topics in CS-2

Research Project

Team No. 38

	ID	Name	Grade
1.	201900836	Moaz ahmed nageb	
2.	201900577	Karim ahmed metwally	
3.	201900772	Mahmoud taha ahmed	
4.	201900566	Fatma moahmoud fouad	
5.	201900919	Neven hamdy saad	
6.	201900935	Hadeer sameh dawod	

Paper details

Citation

Dataset

Pascal VOC and COCO datasets

Implemented algorithm:

improved SSD object detection

Results

Table I. represents the results on Pascal VOC and COCO test.

System Model	mAP	FPS	No. of Boxes	Resolution
F-CNN	73.2	7	6000	1000×600
YOLO	66.4	155	98	448×448
SSD512	76.8	19	24564	512×512
SSD300	74.3	46	8732	300×300
Proposed Approach	78.68	89	5988	1024×1024

Our selected dataset

Dataset name: Obstacle Dataset OD

Link:https://github.com/TW0521/Obstacle-D

Dataset description:

```
-JPEGImages
-Annotations
-ImageSets
  --Main
    ---train.txt
    ---test.txt
    ---val.txt
According to pictures and labels,as follows.
    img-train for training Contains 5066 images      ann-train
    img-test for test Contains 1583 images              ann-test
    img-val for validation Contains 1266 images         ann-val

Classes
["stop_sign","person","bicycle","bus","truck","car","motorbike","reflective_cone","ashcan","
warning_column","spherical_roadblock","pole","dog","tricycle","fire_hydrant"]
```
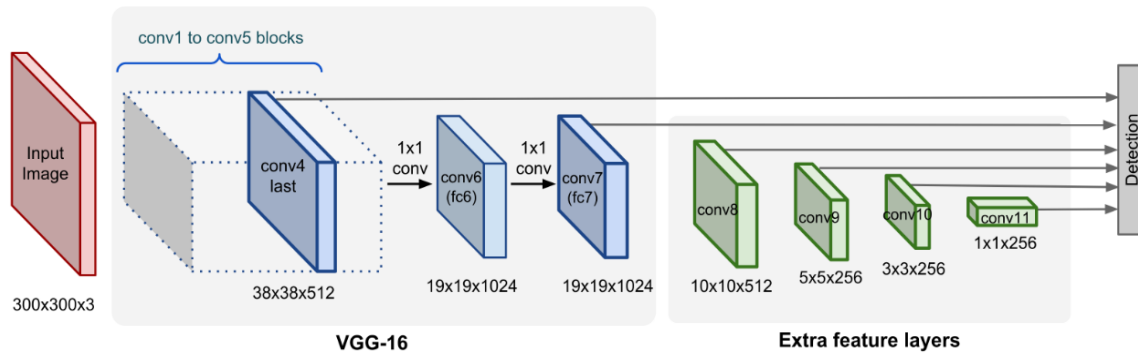
Implementation Details

Hyperparameters:

- Learning Rate: 0.001

- Decay lr at: [0.7, 0.85]

- Weight decay: 5e-4

- Number of train Iterations: 4000

- Input image size: (300X300X3)

- Use pretrained vgg16 weights

- Batch size: 8

- Epochs = number of train iteration // dataloader.length

- Batch normalization flag

- Optimizer: SGD