Ahmedabad
University

Machine Learning + Computer Vision Project

Group - 11

Week-8: Progress Report

Project title:

Evaluate performance of various object detection techniques (in case of small objects) on VisDrone dataset.

Group Members:
AU2040014 Jay Patel
AU2040021 Dhanya Mehta
AU2040265 Spandan Shah

Task performed in this week:
Since we were requiring high computational power for training the model for small object detection, so this week we chose the light weight model yolo-v5-light and its implementation.
We were almost done training all the models like syNet, queryDet and efficientDet and were planning to implement yolo since its a light weight model which might require less computational time as compared to previous model.

Problems faced during the week:
We have started the implementation of the SyNet algorithm and end to end detection transformer and are in phase of solving errors before solving the training the model on the COCO dataset and after testing the model on the same, we will start to train the model on the VisDrone dataset as well. We have to make sure that the dataset of visdrone should be converted into coco format in an acceptable form for the model.

The problem with YOLO is that we have to put the label manually in visDrone dataset which is a challenging task and we are figuring out , how we can solve that apart from that we were able to train our efficient det model by modifying the IOU threshold since as were able to train the model for a very less time due to which we were achieving IOU around 0.20 as there are many bounding boxes forming around 1 image . We need to solve the label problem in yolo for achieving our desire rate of success and after that we can perform our performance evaluation metrics for our dataset if time permits.

References:

- https://arxiv.org/abs/2007.02355
- https://github.com/ultralytics/yolov5