Assignment 3/Mini-project

Deadline: March 20, GROUP SIZE - 1 or 2 or 3

Visual Recognition

Assignment 3a (7 marks)

Play with CNNs

- CIFAR-10 dataset
- AlexNet has 5 Conv and 3 FC layers
- Play with a medium deep network with atleast 2 conv and 2 FC layers.
- Metrics: training time and classification performance
- Compare ReLU vs tanh vs sigmoid
- With and without momentum, adaptive learning rates
- Finally: what would be your recommended architecture..

Assignment 3b (3 marks)

CNN as a feature extracter

- Pick your favourite object recognition dataset, other than CIFAR/MNIST

- Use Alexnet/any deep NN as a feature extracter (extract last layer as features), use any model on top and report the classification accuracies

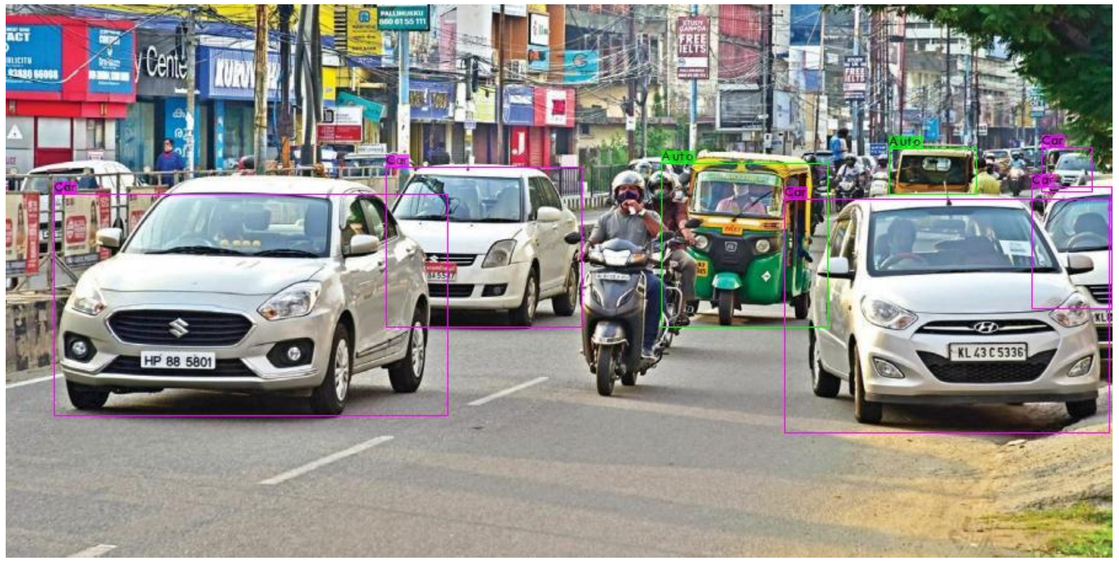
- Report accuracies for Bike vs Horses dataset also

Assignment 3c (10 marks)

Auto detection

- Build an “auto” detector using Faster RCNN/YOLO based methods (one of the above)

- We will give you some auto image data as a starting point, feel free to add or use any other data, or annotate this data (notes folder)



- Document where the method works well or fails

- March 23, 4 PM: VIVA for randomly selected students, everyone should be ready for a call