FasterRCNN Evaluation

1 Prediction Creation

In order to evaluate your implementation and training of the box head we will provide a set of test images for which you will submit your predictions.

You can find the set of images that we will use for the evaluation here [hold_out_images.npz].

hold_out_images.npz: Contains a list of 50 images. Each image is already scaled to 800x1088 and it is represented as a numpy array with dimension (1,3,800,1088).

You must use your trained network to produce bounding box predictions for all these images and save the predicted boxes in **predictions.npz**, which is what you will upload on gradescope's autograder. This process is implemented in the given create_evaluation.py. To use this python script you only need to change the paths of the saved models in your system and the post processing parameters that you use. **Important Note:** It is important that the name of the file that you will upload on gradescope is 'predictions.npz'

predictions.npz: this file contains a dictionary with the following entries

- 'boxes': Is a list of 50 elements, one for each image in the 'hold_out_images.npz'. The i^{th} element either contains a 2D numpy array [dim: (number_of_predictions,4)] with the bounding box predictions of the network for the i^{th} image, or it contains None if there is no prediction.
- 'labels': Is a list of 50 elements, one for each image. The i^{th} element either contains a 1D numpy array [dim: (num_of_predictions)] with the predicted labels of the predicted bounding boxes for the i^{th} image, or it contains None if there is no prediction.
- 'scores': Is a list of 50 elements, one for each image. The i^{th} element either contains a 1D numpy array [dim: (num_of_predictions)] with the scores of the predicted boxes for the i^{th} image, or it contains None if there is no prediction.

2 Submitting to Gradescope

You must upload the produced **predictions.npz** to the autograder of the assignment.

The autograder will check the mAP of your predictions. The results will award half the points of the sixth submission requirement. So getting a 100/100 score will give you 15% of the total points of the assignment. The other half of the points for the sixth requirement will be awarded for the reported AP and mAP on the whole test set which should be reported in the write up submission.

In order to get 100/100 from the autograder you will need to have a mAP above 0.5. In order to get 50/100 from the autograder you will need to have a mAP above 0.3.