The American University in Cairo

Department of Computer Science and Engineering

CSCE 4930 – Practical Machine Deep Learning

Dr. Mohamed Moustafa	Assignment 4 [10%]	Fall 2017

Implement a neural network that can ***best*** detect the 20 different object classes of the PASCAL VOC 2007 challenge.

Details:

a) The VOC 2007 challenge details including data download is here: http://host.robots.ox.ac.uk/pascal/VOC/voc2007/index.html

b) Use the training/validation subset of the data to train/validate your network.

c) Test your network with the testing set and measure your mAP (mean average precision) of the detections.

You are expected to deliver: (one file: first.lastname.assignment4.zip)

1. source code of your implementation for both training and testing your best network. **[2%]** (you can use ready made packages, e.g., Caffe and Tensorflow)

2. short report containing:

   a) a description of your best network architecture and your training parameters, including the random number seed (if any) as your training results have to reproducible. **[3% competitive. Simplest network architecture with minimum number of weights will receive 3% and others will get credit relative to how far their number of weights are from the simplest one] (minimum acceptable average classification accuracy is 50%)**

   b) a plot of loss (Y axis) versus number of training iterations (X axis) showing decreasing (training and validation) losses and highlighting when did you stop the training. **[1%]**

   c) mAP using the testing set. **[4% competitive. Best student will receive 4% and others will get credit relative to how far their mAPs are from the best mAP]**