Assignment 5

CNN part:

(1) Download a tinyImageNet dataset
https://paperswithcode.com/dataset/tiny-imagenet

(2) Use a small and large version of existing image classification models, i.e. pre-trained models, including VGG-19, ResNet50V2, and Inceptionv4. Then, run them on the tinyImageNet.

(3) Experiment classification with all these pre-trained models, on the tinyImageNet dataset, and report their accuracy.

(4) Write a short report and compare the results together. In your report, you need to state why a model is performing better than another model.

RNN part:

(1) Use a synthetic time series generator (e.g. https://github.com/Nike-Inc/timeseries-generator or) and generate time series that has some patterns.

(2) Experiment prediction on the time series with LSTM, GRU, BiDirectional RNN and Deep RNN.

(3) Increase the size of the time series three times, and perform the experiments in step 2, again three times.

(4) Write a short report and compare the result of algorithms and different dataset sizes together. By different datasets, we mean the first time series and the one that has a size of three-time larger.

* You are free to choose your implementation platform, including Pytorch, TensorFlow or MXNet.