Assignment 3: Time-Series Data

Purpose

The purpose of this assignment is to apply RNNs to time-series data.

This assignment aligns with the following module outcome:

- MLO 1: Apply RNNs to a time-series problem.

Getting Started:

In this assignment, you will accomplish the following:

1. How to apply RNNs to time-series data
2. How to improve performance of the network, especially when dealing with time-series data
3. How to apply different deep-learning layers to time-series data

Use any or all of the methods we discussed in class to improve weather time-series forecasting problems discussed in class. These methods can include:

1. Adjusting the number of units in each recurrent layer in the stacked setup
2. Using layer_lstm() instead of layer_gru().
3. Using a combination of 1d_convnets and RNN.

Don't forget to eventually run the best-performing models (in terms of validation MAE) on the test set!

Instructions (what to submit?):

All work must be your own. Copying other people's work or from the Internet is a form of plagiarism and will be prosecuted as such.

You will upload the following to your github account.

1. Your Python or R code, and well-documented knitted output as html/pdf/word.
2. A summary, graph/table, that summarizes your results. This graph or table should clearly indicate what "your" final conclusions or story will be.
3. Your final grade will be a combination of validation accuracy and your presentation of the results.

You should adhere to the following:

- Remember to use the same repository for the class that you used in Assignment 1.
- Create a new folder under that repository. Call it Assignment 3.
- Upload all files to that folder.

- Provide the link to your git repository in Canvas for the assignment. The git link should end in .git.

Due dates are listed in the Assignment Schedule document.

This assignment will be graded using the SAP Rubric.