COS30018 - Option B - Task 6: Machine Learning 3

After you have completed Task 5, our code base has moved to version **v0.5**. The basic idea behind ensemble methods is to use multiple learning algorithms to obtain better predictive performance than could be obtained from any of the single learning algorithms alone. In this task we aim to develop an ensemble approach for combining multiple machine learning and statistical analysis methods for improving prediction quality. You will take some idea from here:

https://medium.com/analytics-vidhya/combining-time-series-analysis-with-artificial-intelligence-the-future-of-forecasting-5196f57db913

Your tasks this week:

1. Develop an ensemble modeling approach consisting of at least two models ARIMA (or SARIMA) and our existing DL model (starting with the LSTM one).
2. Experiment with different ensemble models (e.g., ARIMA/SARIMA/Random Forrest/LSTM/ RNN/GRU, etc.) and with different hyperparameter configurations.
3. Upload your Task 6 Report (as a PDF file) to the project Wiki before the deadline and email your project leader to notify that it is ready for viewing and feedback.

Your Task 6 Report will contain the following details:

- Summary of your effort to implement the ensemble models and explain the less straightforward lines of code, focusing especially on those lines that require you to do some research on the Internet (with proper references to the online resources you used).
- Summaries of the results of your experiments with different configurations of ensemble models and model training.

Due date: **11:59pm Sunday 6 October 2024**

Assessment Criteria:
You can get up to 15 marks for successfully completing Task B.6.