

Summary results of Window\_size effect on the performance of an LSTM prediction model. The number of past time steps used for predictions is influenced by the Window\_size in an LSTM model.

Performance metrics used: Mean Absolute Error.

Window_size	Train_MAE	Validation_MAE	Train_all_MAE	Test_MAE
1	0.18004432	0.23294646	0.17099448	0.05206205
10	0.2588001	0.12998219	0.28086087	0.05337534
20	0.2750293	0.3056806	0.44937843	0.6487313

- Window Size 1: It is the best performer in terms of having the lowest Mean Absolute Error (MAE). Signifying that the prediction model is able to give the right information for accurate predictions with small look-back periods.
- Window Size 10: With an increase in error, its seen that a larger window size might introduce noise or irrelevant information into the model which negatively affects prediction accuracy.
- Window Size 20: The rising errors indicates poor performance and some overfitting.

To sum up, from various MAE values obtained, it seems that LSTM model performs better when used with small window sizes. Higher errors are recorded at 10 and 20 showing that smaller window sizes lead to more accurate forecasts.

Below are loss curves showing a smooth convergence for a small window size:

