

# Exercise “Long Short Term Memory (LSTM)”

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### Introduction:

In the field of computer vision, Convolutional Neural Networks currently dominate the field.

However, in the field of time series analysis, LSTM models dominate the field.

In this exercise you shall build your own LSTM model using Keras.

### Detailed steps:

#### 1. Get training and test data:

Go to the **Rossmann Store Sales** Prediction competition at Kaggle:

<https://www.kaggle.com/c/rossmann-store-sales>

and download the data.

The task in this competition is to predict 6 weeks of daily sales for 1,115 Rossmann stores located across Germany.

#### 2. Understand the training data

Have a look at train.csv:

How many input features are there?

What are the input features?

From which time range is this time series data that is supposed to be used for training?

Explain your answers to your fellow students.

#### 3. Understand what to predict

Have a look at test.csv:

What does Rossmann expect you to predict?

Explain your answer to your fellow students.

#### 4. Understand what to submit

Have a look at sample\_submission.csv

Why are there 41088 lines to submit?

Explain your answer to your fellow students.

#### 5. Load in the data, Build a LSTM model, Train it, Predict, Submit

Load in the data using Pandas and preprocess it.

Then build a LSTM model using Keras and train it using the training data.

Predict the number of sales based on the input features you have from test.csv.

Then submit your predictions to Kaggle!

Prepare a Jupyter notebook that shows how to solve each of these steps.