4TH EXERCISE SESSION

Exercise 1: LSTM for time series

- Using the enclosed dataset ***household_power_consumption.txt***, we want to predict the *Global_active_power* at the current time (t) given the *Global_active_power* measurement **and** other features at the prior time step(t-1). We will use an LSTM model for this purpose. Read more about LSTM here: https://colah.github.io/posts/2015-08-Understanding-LSTMs/
- Load the data set and make a preprocessing (drop the non_numeric values and the date column)
- Transform the dataset to 7 columns of the variables at (t-1) and 1 column of the *Global_active_power* at time (t) (You can perform a shifted copy of the first column and add to the left)
- Split the data to train and validation sets
- Create an LSTM network. Recommended architecture:
  1. LSTM with 100 neurons in the first layer
  2. dropout 20%
  3. 1 neuron in the output layer for predicting *Global_active_power*.
  4. The input shape will be 1 time step with 7 features.
- Train and test the model.
- Visualize the comparison between the predicted and the actual values