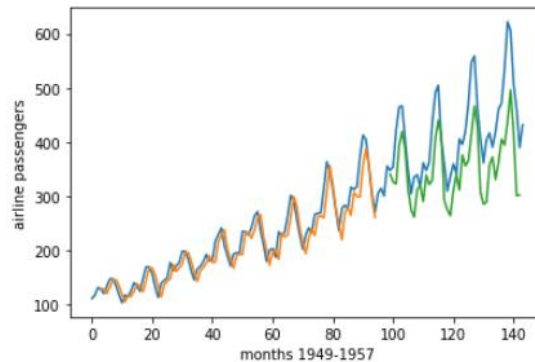


MIW (eng) - mini-project 7 (13.05.20)

Recurrent Neural Networks with Keras: time series



1. Get and prepare data

- Add *utils.py* to your working directory.
- Load the data (number of passengers) from *passangers.csv* as a time series.
- Normalize data to be in the range (0, 1).
- Split the data to train and test datasets.
- Define lookback of the time series.
- Reshape to fit RNN's input shape.

2. Build, train and test:

- Build a model according to this structure (you can change the parameters as well):
 - Sequential*
 - LSTM: 4 units, input shape (1, lookback)
 - Dense: 1 unit
- Compile (remember, it's a regression problem).
- Fit the training data in the model. Suggest the number of epochs.
- Predict for train and test datasets.
- Calculate mean squared error for both predicted train and test datasets.
- Plot the given dataset, predicted train and test datasets.
- Show the model's summary.

Submission:

1. Send a link to your notebook on <https://colab.research.google.com/> to my email ihalych@pja.edu.pl.
2. DON'T erase your outputs in the notebook, I should see them.

Deadline rules:

1. By midnight 13.05.20 - max amount of points is 10
2. By midnight 20.05.20 - max amount of points is 10
3. By midnight 27.05.20 - max amount of points is 5
4. Later - 0 points

Resources:

0. Sequential model
<https://keras.io/getting-started/sequential-model-guide/>
1. Dense layer
<https://keras.io/layers/core/#dense>
2. LSTM layer
<https://keras.io/layers/recurrent/#lstm>
3. Losses
<https://keras.io/losses/>
4. Optimizers
<https://keras.io/optimizers/>
5. Fitting data
<https://keras.io/models/model/#fit>
6. Compiling a model
<https://keras.io/models/model/#compile>
7. Model's summary and more
<https://keras.io/models/about-keras-models/>