Exploring Network Architectures in Time Series Classification with Deepvalve

by

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Description

Time series classification benefits from recurrent connections (RNN). However, it is not obvious if additional memory cells (LSTM/GRU) are per se necessary or if convolutional structures (CNN) may yield the same or even better information/precision.
Deepvalve is an AI project where an AI system predicts the inner state of a sensorless valve via labeling the measured electrical current of the valves engine. Within this dataset, we will evaluate and gauge different network architectures.

Requirements

- Python
- Keras (Bonus: Tensorfllow)
- Bonus: git...

Test Task

Take a look at https://machinelearningmastery.com/indoor-movement-time-series-classification-with-machine-learning-algorithms/ .
Follow the tutorial and extend it using

(a) a simple dense neural network and

(b) a recurrent neural network using Keras with TensorFlow backend.

Prepare a report where you describe your approach and compare the algorithms with each other as well as with those presented in the tutorial.

Hand in the code of your solution (preferably through GitHub/BitBucket repo).