

NIPS Reproducibility Challenge for Paper: Shape and Time Distortion Loss for Training Deep Time Series Forecasting Models

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1 Prerequisites for Getting Started

- The link to the github repository. **Click here!**
- Data sources.
 - ECG Data
 - Wafer Data
 - Traffic Data
- Related papers.
 - **Shape and Time Distortion Loss for Training Deep Time Series Forecasting Models**
 - **Soft-DTW: a Differentiable Loss Function for Time-Series**
 - **Introducing the Temporal Distortion Index to perform a bidimensional analysis of renewable energy forecast**

2 Dependencies

- numpy
- pandas
- matplotlib
- sklearn
- pytorch
- numba
- tslearn

3 Content

3.1 Project folder

- In the models folder, you can find four machine learning architectures. (We mainly use *conv_lstm*, *fnn*, *seq2seq* these three models to do the reproduction work.)
- In the loss folder, there are custom loss function **dilate loss** and it's back propagation implementation.
- *alpha_test* and *gamma_test* folders contain our experiments on parameter α and γ , and all the files can be executed on Jupyter notebook.
- *data* folder includes all the data loaders which would be used when testing on different dataset.
- *diff_test* folder has 12 Jupyter notebooks which consists of 4 different dataset runing on 3 models.
- *run_on_cnn_lstm_model.py*, *run_on_fcnn_model.py* and *run_on_seq2seq_model.py* are three python files that could be directly run on Pycharm. These experiments only run on synthetic data. If you want to try on different dataset, you need to download other dataset and put data into corresponding dataloader.