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UniV-Forecasting

An open source univariate time series forecasting framework that provides following features:

- An automation framework intergrated with data preprocess, hyper-parameters setting, hyper-parameters tuning, model training, model evaluation, and experiment logging.
- An easy user-replaced model packing paradigm compatible with both statistical, stochasitc, and training models.
- Ready-to-use forecasting models, supported with both GPU acceleration or CPU only.
 - Strong basline models including CNN, RNN (Elman, GRU, LSTM), DeepAR, and Conv-LSTM.
 - Classic statistical and machine learning models including ARIMA, Holt-Winter, MLP, and MSVR.
 - Our proposed deep learning models.

Main Dependence

- python \geq 3.6
- pytorch = 1.9.1
- CUDA (as required as pytorch, if using GPU)
- ray = 1.6.0 (as required by the specific optimizaiton algorithm, if using TaskTuner)
- scikit-learn = 1.0.2

Provided models

- Strong deep neural networks.
- Classic statistical and machine learning models.

- Promising neural networks with random weights.
- Our proposed models.

The provided models we implemented are referred to these papers respectively.

Model name	Paper
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