Package ‘stlTDNN’

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**Data_potato**  
*Normalized Monthly Average Potato Price of India*

**Description**
Normalized Monthly Average Potato Price of India from January 2010 to July 2020.

**Usage**
```r
data("Data_potato")```

**Format**
A time series data with 127 observations.
```r
price  a time series```

**Details**
Dataset contains 127 observations of normalized monthly average potato price of India. It is obtained from World Bank "Pink sheet".

**Source**
Department of Consumer Affairs, Govt. of India

**References**
https://consumeraffairs.nic.in/

**Examples**
```r
data(Data_potato)```

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**STLTDNN**  
*STL Based TDNN Hybrid Forecast*

**Description**
The STLTDNN function forecasts univariate time series using a hybrid model made of a decomposition technique called seasonal trend decomposition based on loess (STL) and a neural network based forecasting technique called time delay neural network (TDNN). The function further computes the values of different forecasting evaluation criteria.

**Usage**
```r
STLTDNN(data, stepahead=12)```
Arguments

data    Input univariate time series (ts) data.
stepahead    The forecast horizon.

Details

This function decomposes a nonlinear, nonstationary and seasonal time series into trend-cycle, seasonal and remainder component using STL (Cleveland et al., 1990). Time delay neural network is used to forecast these components individually (Jha and Sinha, 2014). Finally, the prediction results of all the three components are aggregated to formulate an ensemble output for the input time series.

Value

data_test    Testing set used to measure the out of sample performance.
STLcomp_forecast    Forecasted value of all individual components.
FinalstlTDNN_forecast    Final forecasted value of the stlTDNN model. It is obtained by combining the forecasted value of all individual components.
MAE_stlTDNN    Mean Absolute Error (MAE) for stlTDNN model.
SMAPE_stlTDNN    Mean Absolute Percentage Error (MAPE) for stlTDNN model.
RMSE_stlTDNN    Root Mean Square Error (RMSE) for stlTDNN model.

References


Examples

data("Data_potato")
STLTDNN(Data_potato)
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