Package ‘stlELM’

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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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STLELM  

**STL Based ELM Forecasting Model**

**Description**

The STLELM function forecasts a 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 extreme learning machine (ELM). The function further computes the values of different forecasting evaluation criteria.

**Usage**

```r
STLELM(data, stepahead=10)
```
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). Extreme learning machine (ELM) is used to forecast these components individually (Huang et al., 2006, Xiong et al. 2018). 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.
FinalstlELM_forecast  Final forecasted value of the stlELM model. It is obtained by combining the forecasted value of all individual components.
MAE_stlELM  Mean Absolute Error (MAE) for stlELM model.
SMAPE_stlELM  Mean Absolute Percentage Error (MAPE) for stlELM model.
RMSE_stlELM  Root Mean Square Error (RMSE) for stlELM model.

References


Examples

data("Data_potato")
STLELM(Data_potato)
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