Package 'WaveletLSTM'

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Type Package

Title Wavelet Based LSTM Model

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Description
A wavelet-based LSTM model is a type of neural network architecture that uses wavelet technique to pre-process the input data before passing it through a Long Short-Term Memory (LSTM) network. The wavelet-based LSTM model is a powerful approach that combines the benefits of wavelet analysis and LSTM networks to improve the accuracy of predictions in various applications. This package has been developed using the algorithm of Anjoy and Paul (2017) and Paul and Garai (2021) <DOI:10.1007/s00521-017-3289-9> <doi:10.1007/s00500-021-06087-4>.

License GPL-3

Encoding UTF-8

Imports caret, dplyr, caretForecast, tseries, stats, wavelets, TSLSTM

RoxygenNote 7.2.1

NeedsCompilation no

Repository CRAN

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Description

Wavelet Based LSTM Model

Usage

```
WaveletLSTM(
  ts,
  MLag = 12,
  split_ratio = 0.8,
  wlevels = 3,
  epochs = 25,
  LSTM_unit = 20
)
```

Arguments

ts	Time Series Data
MLag	Maximum Lags
split_ratio	Training and Testing Split
wlevels	Wavelet Levels
epochs	Number of epochs
LSTM_unit	Number of unit in LSTM layer

Value

- Train_actual: Actual train series
- Test_actual: Actual test series
- Train_fitted: Fitted train series
- Test_predicted: Predicted test series

References

Paul, R.K. and Garai, S. (2021). Performance comparison of wavelets-based machine learning technique for forecasting agricultural commodity prices, Soft Computing, 25(20), 12857-12873

Examples

```
y<-rnorm(100,mean=100,sd=50)
WTSLSTM<-WaveletLSTM(ts=y)
```

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