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>.

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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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