

Package ‘WaveletGBM’

July 21, 2025

Type Package

Title Wavelet Based Gradient Boosting Method

Version 0.1.0

Author Dr. Ranjit Kumar Paul [aut, cre],
Dr. Md Yeasin [aut]

Maintainer Dr. Ranjit Kumar Paul <ranjitstat@gmail.com>

Description Wavelet decomposition method is very useful for modelling noisy time series data. Wavelet decomposition using 'haar' algorithm has been implemented to developed hybrid Wavelet GBM (Gradient Boosting Method) model for time series forecasting using algorithm by Anjoy and Paul (2017) <[DOI:10.1007/s00521-017-3289-9](https://doi.org/10.1007/s00521-017-3289-9)>.

License GPL-3

Encoding UTF-8

Imports caret, dplyr, caretForecast, Metrics, tseries, stats,
wavelets, gbm

RoxygenNote 7.2.1

NeedsCompilation no

Repository CRAN

Date/Publication 2023-04-07 08:20:02 UTC

Contents

WaveletGBM	2
Index	3

WaveletGBM

*Wavelet Based Gradient Boosting Method***Description**

Wavelet Based Gradient Boosting Method

Usage

```
WaveletGBM(ts, MLag = 12, split_ratio = 0.8, wlevels = 3)
```

Arguments

ts	Time Series Data
MLag	Maximum Lags
split_ratio	Training and Testing Split
wlevels	Number of Wavelet Levels

Value

- Lag: Lags used in model
- Parameters: Parameters of the model
- Train_actual: Actual train series
- Test_actual: Actual test series
- Train_fitted: Fitted train series
- Test_predicted: Predicted test series
- Accuracy: RMSE and MAPE of the model

References

- Aminghafari, M. and Poggi, J.M. 2012. Nonstationary time series forecasting using wavelets and kernel smoothing. *Communications in Statistics-Theory and Methods*, 41(3),485-499.
- Paul, R.K. A and Anjoy, P. 2018. Modeling fractionally integrated maximum temperature series in India in presence of structural break. *Theory and Applied Climatology* 134, 241–249.

Examples

```
library("WaveletGBM")
data<- rnorm(100,100, 10)
WG<-WaveletGBM(ts=data)
```

Index

WaveletGBM, [2](#)