

# Package ‘WaveletGBM’

April 7, 2023

**Type** Package

**Title** Wavelet Based Gradient Boosting Method

**Version** 0.1.0

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**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

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WaveletGBM

*Wavelet Based Gradient Boosting Method*

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### 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)
```

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