Package ‘TSANN’

December 14, 2021

Type Package

Title Time Series Artificial Neural Network

Version 0.1.0

Author Md Yeasin [aut, cre],
Ranjit Kumar Paul [aut],
Dipro Sinha [aut]

Maintainer Md Yeasin <yeasin.iasri@gmail.com>

Description
The best ANN structure for time series data analysis is a demanding need in the present era.
This package will find the best-fitted ANN model based on forecasting accuracy.
The optimum size of the hidden layers was also determined after determining the number of lags to be included.
This package has been developed using the algorithm of Paul and Garai (2021) <doi:10.1007/s00500-021-06087-4>.

License GPL-3

Encoding UTF-8

RoxygenNote 7.1.2

Imports forecast, gtools, stats, utils

NeedsCompilation no

Repository CRAN

Date/Publication 2021-12-14 08:40:07 UTC

R topics documented:

Auto.TSANN ................................................................. 2

Index ................................................................. 3
Description

The best ANN structure for time series data analysis is a demanding need in the present era. This package will find the best-fitted ANN model based on forecasting accuracy. The optimum size of the hidden layers was also determined after determining the number of lags to be included. This package has been developed using the algorithm of Paul and Garai (2021) <doi:10.1007/s00500-021-06087-4>.

Usage

Auto.TSANN(data, min.size, max.size, split.ratio)

Arguments

data: Time Series Data
min.size: Minimum Size of Hidden Layer
max.size: Maximum Size of Hidden Layer
split.ratio: Training and Testing Split Ratio

Value

A list containing:

- FinalModel: Best ANN model
- Trace: Matrix of All Iteration
- FittedValue: Model Fitted Value
- PredictedValue: Model Forecast Value of Test Data
- Train.RMSE: Root Mean Square Error of Train Data
- Test.RMSE: Root Mean Square Error of Test Data

References


Examples

```r
set.seed(16)
x<-rnorm(n = 50, mean = 150, sd = 10)
Auto.TSANN(x,1,2,0.80)
```
Index

Auto.TSANN, 2