Package: PSF (via r-universe)

September 14, 2024

Type Package

Title Forecasting of univariate time series using the Pattern
Sequence-based Forecasting (PSF) algorithm

Version 0.3

Date 2016-08-13

Author Neeraj Bokde, Gualberto Asencio-Cortes and Francisco
Martinez-Alvarez

Maintainer Neeraj Bokde <neerajdhanraj@gmail.com>

Description Pattern Sequence Based Forecasting (PSF) takes univariate
time series data as input and assist to forecast its future
values. This algorithm forecasts the behavior of time series
based on similarity of pattern sequences. Initially, clustering
is done with the labeling of samples from database. The labels
associated with samples are then used for forecasting the
future behaviour of time series data. The further technical
details and references regarding PSF are discussed in Vignette.

BugReports https://github.com/neerajdhanraj/PSF/issues

URL http://www.neerajbokde.com/cran/psf

License GPL (>= 2)

Imports data.table, cluster, knitr, forecast

LazyData TRUE

VignetteBuilder knitr

RoxygenNote 5.0.1

NeedsCompilation no

Repository https://neerajdhanraj.r-universe.dev

RemoteUrl https://github.com/neerajdhanraj/psf

RemoteRef HEAD

RemoteSha e48a2345367e1354329d160ba874c421cf0a36fc

Contents

Index **4**

---

psf   *Forecasting of univariate time series using the PSF algorithm*

Description

Takes an univariate time series and the prediction horizon as inputs.

Usage

```
psf(data, n.ahead, k = seq(2, 10), w = seq(1, 10), cycle = 24)
```

Arguments

data	Input univariate time series, in any format (time series (ts), vector, matrix, list, data frame).
n.ahead	The number of predicted values to be obtained.
k	The number of clusters, or a vector of candidate values to search for the optimum automatically.
w	The window size, or a vector of candidate values to search for the optimum automatically.
cycle	The number of values that conform a cycle in the time series (e.g. 24 hours per day). Only used when input data is not in time series format.

Value

A list with 3 elements:

predictions	Vector with the resulting predictions
k	Number of clusters used
w	Window size used

Examples

```
## Forecast the next 12 values of the univariate time series: nottem (package:datasets).
psf(nottem, 12)

## Forecast the next 48 values of the univariate time series: sunspots (package:datasets).
psf(sunspots, 48)
```

---

psf_plot *Plot actual and forecasted values of an univariate time series*

Description

Takes an univariate time series and a vector with forecasted values.

Usage

```
psf_plot(data, predictions, cycle = 24, ...)
```

Arguments

`data`	Input univariate time series (in either time series (ts) or vector format). All values should be numeric.
`predictions`	A vector with already forecasted values.
`cycle`	The number of values that conform a cycle in the time series (e.g. 24 hours per day, 12 month per year, and so on). Only used when input data is not in time series (ts) format.
`...`	Additional graphical parameters given to plot function.

Examples

```
## Forecast the next 12 values of the univariate time series: nottem (package:datasets).
res <- psf(nottem, 12)

## Plot forecasted values from PSF.
psf_plot(nottem, res$predictions)
```

Index