Package: paramsim (via r-universe)

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Type Package

Title Parameterized Simulation

Version 0.1.0

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Description This function obtains a Random Number Generator (RNG) or collection of RNGs that replicate the required parameter(s) of a distribution for a time series of data. Consider the case of reproducing a time series data set of size 20 that uses an autoregressive (AR) model with phi = 0.8 and standard deviation equal to 1. When one checks the arima.sin() function's estimated parameters, it's possible that after a single trial or a few more, one won't find the precise parameters. This enables one to look for the ideal RNG setting for a simulation that will accurately duplicate the desired parameters.

Depends R (>= 4.2.0)

Imports forecast, foreach, parallel, doParallel, future, stats, tibble

License GPL (>= 2)

Encoding UTF-8

RoxygenNote 7.2.3

LazyData true

Suggests knitr, testthat (>= 3.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

Repository https://sta189332.r-universe.dev

RemoteUrl https://github.com/sta189332/paramsim

RemoteRef HEAD

RemoteSha 1e0fdc4a7da2da9c5a84d71ff984fa4a8428c526

Contents

`arimasim` *Parameterized Simulation*

Description

Parameterized Simulation

Usage

```
arimasim(
  a,
  z,
  n,
  ar11,
  ma11,
  ar22,
  ma22,
  ar33,
  ma33,
  p,
  d,
  q,
  sd = sd,
  j1,
  k1,
  j2,
  k2,
  j3,
  k3,
  arr1,
  maa1,
  arr2,
  maa2,
  arr3,
  maa3
)
```

Arguments

`a`	first seed boundary
`z`	last seed boundary
`n`	number of samples
`ar11`	character to search for in third coefficient of autoregressive
`ma11`	character to search for in third coefficient of autoregressive
`ar22`	character to search for in third coefficient of autoregressive

ma22	character to search for in third coefficient of autoregressive
ar33	character to search for in third coefficient of autoregressive
ma33	character to search for in third coefficient of autoregressive
p	order of the autoregressive
d	degree of difference
q	degree of moving average
sd	standard deviation of the series
j1	length of character to search for in first coefficient of autoregressive
k1	length of character to search for in third coefficient of autoregressive
j2	length of character to search for in second coefficient of autoregressive
k2	length of character to search for in third coefficient of autoregressive
j3	length of character to search for in third coefficient of autoregressive
k3	length of character to search for in third coefficient of autoregressive
arr1	character to search for in first coefficient of autoregressive
maa1	character to search for in third coefficient of autoregressive
arr2	character to search for in second coefficient of autoregressive
maa2	character to search for in third coefficient of autoregressive
arr3	character to search for in third coefficient of autoregressive
maa3	character to search for in third coefficient of autoregressive

Value

A data frame get printed to the console with its first colomn being the rank and the next few column could be the coefficients of AR or MA both with varying orders depending on the order and classes of ARIMA model being searched for. The last column of the data frame could be the intercept if any exist within the range of the search.

Functions

- `arimasim()`: arimasim helps to Search for rigth seeds for the rigth AR simulation with arima.sin() finction using auto.arima() function

  Search for rigth seeds for the rigth ARIMA simulation with arima.sin() function using auto.arima() function

  This function obtains a Random Number Generator (RNG) or collection of RNGs that replicate the required parameter(s) of a distribution for a time series of data. Consider the case of reproducing a time series data set of size 20 that uses an autoregressive (AR) model with phi = 0.8 and standard deviation equal to 1. When one checks the arima.sin() function's estimated parameters, it's possible that after a single trial or a few more, one won't find the precise parameters. This enables one to look for the ideal RNG setting for a simulation that will accurately duplicate the desired parameters.

Examples

```
arimasim(a= 289805,z= 289806,n= 10,p= 1,d= 0,q= 0,ar11= 0.8,sd = 1,j1= 4,arr1= "0.80")
```

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