Package ‘normalr’

October 13, 2022

Title  Normalisation of Multiple Variables in Large-Scale Datasets
Version  1.0.0
Description  The robustness of many of the statistical techniques, such as factor analysis, applied in the social sciences rests upon the assumption of item-level normality. However, when dealing with real data, these assumptions are often not met. The Box-Cox transformation (Box & Cox, 1964) provides an optimal transformation for non-normal variables. Yet, for large datasets of continuous variables, its application in current software programs is cumbersome with analysts having to take several steps to normalise each variable. We present an R package 'normalr' that enables researchers to make convenient optimal transformations of multiple variables in datasets. This R package enables users to quickly and accurately: (1) anchor all of their variables at 1.00, (2) select the desired precision with which the optimal lambda is estimated, (3) apply each unique exponent to its variable, (4) rescale resultant values to within their original X1 and X(n) ranges, and (5) provide original and transformed estimates of skewness, kurtosis, and other inferential assessments of normality.

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License  GPL
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LazyData  true
Imports  MASS, parallel, purrr, magrittr, rlang, shiny
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getLambda

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getLambda Get Optimal Lambda value

Description

Computes optimal lambda value using boxcox function from the provided data.

Usage

getLambda(dat, lambda = seq(-10, 10, 1/100), parallel = TRUE)

Arguments

dat a data frame containing the variables of numeric or integer vectors.
lambda a vector of values of lambda – default (-10, 10) in steps of 0.01.
parallel perform the computation in parallel, default setting is TRUE.

Value

a numeric vector

References


Examples

## Not run: getLambda(mtcars)
getLambda(mtcars, parallel = FALSE)
normalise

Apply normalisation on a numeric vector using a specific Lambda value

Description

Apply normalisation on a numeric vector using a specific Lambda value

Usage

```r
normalise(x, lambda = 3)
```

Arguments

- `x`: a numeric vector to be normalised.
- `lambda`: a numeric vector from the `boxcox` function

Value

a numeric vector

Examples

```r
x <- c(1, 5, 9, 9, 9, 9, 10, 10, 10, 11, 11, 12)
normalise(x, lambda = 3)
```

normaliseData

Apply normalisation on a data frame using specific Lambda value

Description

Apply normalisation on a data frame using specific Lambda value

Usage

```r
normaliseData(dat, lambdas)
```

Arguments

- `dat`: a data frame containing the variables.
- `lambdas`: a numeric vector from the `boxcox` function

Value

a data frame
Examples

## Not run: normaliseData(mtcars, getLambda(mtcars, parallel = FALSE))
normaliseData(mtcars, getLambda(mtcars, parallel = FALSE))

normalrShiny

**Shiny application of the normalr**

Description

Shiny application of the normalr

Usage

normalrShiny(example = "normalr")

Arguments

example name of the shiny apps

Examples

## Not run: normalrShiny()

testData

**Test dataset for the paper**

Description

Test dataset for the paper

Usage

testData

Format

An object of class data.frame with 957 rows and 9 columns.
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