

Package ‘rapidsplit’

February 22, 2024

Type Package
Title Fast split-half reliability algorithm
Version 0.0.1.0
Date 2021-11-24
Author Sercan Kahveci
Maintainer Sercan Kahveci <sercan.kahveci@plus.ac.at>
Description Fast and flexible split-half reliability algorithm.
License GPL (>= 2)
Imports Rcpp (>= 1.0.5), AATtools
LinkingTo Rcpp
RoxygenNote 7.3.1
Encoding UTF-8

R topics documented:

applyItersplits	1
colMedians	2
colSds	2
corByColumns	3
ExcludeSDOutliers	3
maskOLExclusion	4
rapidsplit	4
stratified_itersplits	5
Index	6

applyItersplits	<i>applyItersplits</i>
-----------------	------------------------

Description

generate splits for splithalf

Usage

```
applyItersplits(iters, splits, replace = FALSE)
```

Arguments

iters	number of iterations
splits	list of vectors of row numbers
replace	Sample without (default) or with replacement

colMedians

*colMedians***Description**

get column medians

Usage

colMedians(mat)

colMedians_mask(mat, mask)

mediansByMask(values, mask)

colMeans_mask(mat, mask)

meansByMask(values, mask)

Arguments

mat	a matrix with values to aggregate
mask	a logical matrix determining which data points to include and which not to
values	Values to aggregate over in different mask configurations

colSds

*colSds***Description**

get column SDs

Usage

colSds(mat)

colSds_mask(mat, mask)

sdsByMask(values, mask)

Arguments

mat	the matrix to retrieve column SDs from
mask	a logical matrix determining which data points to include and which not to
values	Values to aggregate over in different mask configurations

corByColumns	<i>Correlate each column of 1 matrix with the same column in another matrix</i>
--------------	---

Description

Correlate each column of 1 matrix with the same column in another matrix

Usage

```
corByColumns(mat1, mat2)
```

```
corByColumns_mask(mat1, mat2, mask)
```

Arguments

mat1, mat2	Matrices whose values to correlate by column
mask	Logical matrix marking which data points to include

Value

A numeric vector of correlations per column

ExcludeSDOutliers	<i>Exclude SD-based outliers</i>
-------------------	----------------------------------

Description

Update a mask matrix based on outlyingness

Usage

```
ExcludeSDOutliers(rtvec, mask, sdlim = 3)
```

```
ExcludeSDOutliers_nomask(mat, sdlim = 3)
```

Arguments

rtvec	Reaction time vector
mask	a logical matrix determining which data points to include and which not to
sdlim	Standard deviation limit to apply; values beyond are classified as outliers and masked
mat	Matrix in which to mark SD-based outliers by column (with FALSE)

Value

An updated mask

maskOLExclusion	<i>Exclude outliers by mask</i>
-----------------	---------------------------------

Description

Exclude outliers by mask

Usage

```
maskOLExclusion(values, mask, maxsd)
```

Arguments

values	values to detect outliers from
mask	a logical matrix determining which data points to include per iteration (column)

Value

An updated logical mask matrix with all outliers excluded

rapidsplit	<i>rapidsplit</i>
------------	-------------------

Description

A very fast algorithm for permuted split-half reliability

Usage

```
rapidsplit(
  ds,
  subjvar,
  diffvars = NULL,
  stratvars = NULL,
  rtvar,
  iters,
  agg = c("means", "medians"),
  standardize = F
)
```

Arguments

ds	Dataset, a <code>data.frame</code>
subjvar	Subject ID variable name, a character
diffvars	Variables that determine which conditions need to be subtracted from each other, a character
stratvars	Additional variables that the splits should be stratified by, if possible; a character
rtvar	Reaction time variable name, a character
iters	Number of split-halves to average, an integer
agg	The function by which to aggregate the RTs; can be "means" or "medians"
standardize	Whether to divide by scores by the subject's SD; a logical

Value

A list containing the averaged reliability as well as a vector with the reliability of each iteration

Examples

```
print("no example")
```

```
stratified_itersplits stratified_itersplits
```

Description

generate stratified splits for a single participant

Usage

```
stratified_itersplits(itercount, groupsizes)
```

Arguments

itercount	number of iterations
groupsizes	vector of number of RTs per group to stratify

Details

This first equally splits what can be equally split within groups. Then it randomly splits all the leftovers.

Value

A matrix with zeroes and ones

Index

`applyItersplits`, [1](#)

`colMeans_mask` (`colMedians`), [2](#)

`colMedians`, [2](#)

`colMedians_mask` (`colMedians`), [2](#)

`colSds`, [2](#)

`colSds_mask` (`colSds`), [2](#)

`corByColumns`, [3](#)

`corByColumns_mask` (`corByColumns`), [3](#)

`ExcludeSDOutliers`, [3](#)

`ExcludeSDOutliers_nomask`
 (`ExcludeSDOutliers`), [3](#)

`maskOLExclusion`, [4](#)

`meansByMask` (`colMedians`), [2](#)

`mediansByMask` (`colMedians`), [2](#)

`rapidsplit`, [4](#)

`rapidsplit-package` (`rapidsplit`), [4](#)

`sdsByMask` (`colSds`), [2](#)

`stratified_itersplits`, [5](#)