

Package ‘datautils’

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Author Pierrick Bruneau

Maintainer Pierrick Bruneau <pbruneau@gmail.com>

Title Support functions for packages VBmix, semisupKernelPCA, and patchPlot.

Description Support functions for packages VBmix, semisupKernelPCA, and patchPlot.

Depends R (>= 2.10.0), deldir, gplots

Imports gtools

LazyLoad yes

LazyData yes

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R topics documented:

getElapsed	2
getPurity	2
getTimestamp	3
mergeToList	4
plot.deldir	4
plotmeanshack	6
upper	7

Index	8
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getElapsed

getElapsed

Description

return the decimal number of seconds elapsed since a reference timestamp.

Usage

```
getElapsed(stamp)
```

Arguments

stamp timestamp of a reference.

Value

decimal number of seconds since reference timestamp.

Author(s)

Pierrick Bruneau

See Also

getTimestamp

Examples

```
stamp <- getTimestamp()  
Sys.sleep(1)  
stamp2 <- getElapsed(stamp)
```

getPurity*getPurity*

Description

Gets the purity of a label vector wrt a ground truth (in the context of a clustering algorithm).

Usage

```
getPurity(truthLabels, inferLabels)
```

Arguments

`truthLabels` ground truth labels, to which inferred labels are compared to compute the purity value
`inferLabels` vector of inferred labels, which should have the same length as `truthLabels`

Value

purity value in [0,1]

Author(s)

Pierrick Bruneau

Examples

```
temp <- getPurity(c(1,1,1,2,1,5,3,4,5,3), c(2,2,2,3,1,1,3,4,2,3))
```

<code>getTimestamp</code>	<i>getTimestamp</i>
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Description

Returns the current timestamp.

Usage

```
getTimestamp()
```

Value

numeric vector with 2 values (number of seconds since epoch, and number of microseconds in current second).

Author(s)

Pierrick Bruneau

See Also

`getElapsed`

Examples

```
stamp <- getTimestamp()
```

mergeToList

mergeToList

Description

Merges k objects (lists or vectors), all being of length L , into a list object of length L , with each list cell being a list of the k elements in L -th position in their respective object.

Usage

```
mergeToList(...)
```

Arguments

... k objects to be merged. Their lengths are checked, and should be all equal.

Value

Merged list as specified above.

Author(s)

Pierrick Bruneau

Examples

```
temp <- mergeToList(c(1,2), list(3,4), c(5,6))
```

plot.deldir

plot.deldir

Description

overrides the original plot.deldir function, to support background colors when printing the tessellation.

Usage

```
## S3 method for class 'deldir'
plot(x, add = FALSE, wlines = c("both", "triang", "tess"),
     wpoints = c("both", "real", "dummy", "none"), number = FALSE,
     cex = 1, nex = 1, col = NULL, lty = NULL, pch = NULL, xlim = NULL,
     ylim = NULL, xlab = "x", ylab = "y", showrect = FALSE, fill = NULL, ...)
```

Arguments

<code>x</code>	see documentation of <code>deldir::plot.deldir</code>
<code>add</code>	see documentation of <code>deldir::plot.deldir</code>
<code>wlines</code>	see documentation of <code>deldir::plot.deldir</code>
<code>wpoints</code>	see documentation of <code>deldir::plot.deldir</code>
<code>number</code>	see documentation of <code>deldir::plot.deldir</code>
<code>cex</code>	see documentation of <code>deldir::plot.deldir</code>
<code>nex</code>	see documentation of <code>deldir::plot.deldir</code>
<code>col</code>	see documentation of <code>deldir::plot.deldir</code>
<code>lty</code>	see documentation of <code>deldir::plot.deldir</code>
<code>pch</code>	see documentation of <code>deldir::plot.deldir</code>
<code>xlim</code>	see documentation of <code>deldir::plot.deldir</code>
<code>ylim</code>	see documentation of <code>deldir::plot.deldir</code>
<code>xlab</code>	see documentation of <code>deldir::plot.deldir</code>
<code>ylab</code>	see documentation of <code>deldir::plot.deldir</code>
<code>showrect</code>	see documentation of <code>deldir::plot.deldir</code>
<code>fill</code>	vector of colors (in any valid R color format). Each color in the vector is used for the background of the Voronoi cell of the associated element in <code>x</code> .
<code>...</code>	see documentation of <code>deldir::plot.deldir</code>

Author(s)

Pierrick Bruneau

Examples

```
xvals <- rnorm(50)
yvals <- rnorm(50)
res <- deldir(xvals, yvals)

rvalues <- runif(50)
gvalues <- runif(50)
bvalues <- runif(50)
plot(res, wlines="tess", fill=rgb(rvalues, gvalues, bvalues))
```

plotmeanshack	<i>plotmeanshack</i>
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Description

Hack of the plotmeans function (gplots package), to allow native scale on the x axis, if the associated grouping variable is numeric.

Usage

```
plotmeanshack(formula, data = NULL, subset, na.action, bars = TRUE,
  p = 0.95, minsd = 0, minbar = NULL, maxbar = NULL, xlab = names(mf)[2],
  ylab = names(mf)[1], mean.labels = FALSE, ci.label = FALSE,
  n.label = TRUE, digits = getOption("digits"), col = "black",
  barwidth = 1, barcol = "blue", connect = TRUE, ccol = col,
  legends = names(means), xaxt, use.t = TRUE, nummeans=TRUE, ...)
```

Arguments

formula	see documentation of gplots::plotmeans
data	see documentation of gplots::plotmeans
subset	see documentation of gplots::plotmeans
na.action	see documentation of gplots::plotmeans
bars	see documentation of gplots::plotmeans
p	see documentation of gplots::plotmeans
minsd	see documentation of gplots::plotmeans
minbar	see documentation of gplots::plotmeans
maxbar	see documentation of gplots::plotmeans
xlab	see documentation of gplots::plotmeans
ylab	see documentation of gplots::plotmeans
mean.labels	see documentation of gplots::plotmeans
ci.label	see documentation of gplots::plotmeans
n.label	see documentation of gplots::plotmeans
digits	see documentation of gplots::plotmeans
col	see documentation of gplots::plotmeans
barwidth	see documentation of gplots::plotmeans
barcol	see documentation of gplots::plotmeans
connect	see documentation of gplots::plotmeans
ccol	see documentation of gplots::plotmeans
legends	see documentation of gplots::plotmeans

xaxt	see documentation of <code>gplots::plotmeans</code>
use.t	see documentation of <code>gplots::plotmeans</code>
nummeans	if TRUE, the independent variable (r.h.s.) in formula should be numeric
...	see documentation of <code>gplots::plotmeans</code>

Author(s)

Pierrick Bruneau

Examples

```
data(state)
plotmeanshack(state.area ~ state.region, nummeans=FALSE) # non-numeric independent variable
data(iris)
irisdat <- cbind(iris[,1:4], c(rep(1,50), rep(2,50), rep(5,50)))
names(irisdat)[5] <- "iris.class"
plotmeanshack(Sepal.Width ~ iris.class, data=irisdat, nummeans=TRUE) # (artificial) numeric variable
```

upper	<i>upper</i>
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Description

Returns the $(d*(d-1)/2) \times 2$ matrix of the (i,j) indexes to the upper triangle of a $d \times d$ matrix. The result can then directly be used as an index, see example.

Usage

```
upper(d)
```

Arguments

d dimension of the square matrix which we intend to index.

Value

Index values

Author(s)

Pierrick Bruneau

Examples

```
inds <- upper(5)
vals <- matrix(runif(25), nrow=5)
selvals <- vals[inds] # vector containing the values of the upper triangle
```

Index

`getElapsed`, 2
`getPurity`, 2
`getTimestamp`, 3

`mergeToList`, 4

`plot.deldir`, 4
`plotmeanshack`, 6

`upper`, 7