Package 'datautils'

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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

License LGPL-3

NeedsCompilation yes

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R topics documented:

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))
```

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getTimestamp *getTimestamp*

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 tesselation.

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

x	see documentation of deldir::plot.deldir
add	see documentation of deldir::plot.deldir
wlines	see documentation of deldir::plot.deldir
wpoints	see documentation of deldir::plot.deldir
number	see documentation of deldir::plot.deldir
cex	see documentation of deldir::plot.deldir
nex	see documentation of deldir::plot.deldir
col	see documentation of deldir::plot.deldir
lty	see documentation of deldir::plot.deldir
pch	see documentation of deldir::plot.deldir
xlim	see documentation of deldir::plot.deldir
ylim	see documentation of deldir::plot.deldir
xlab	see documentation of deldir::plot.deldir
ylab	see documentation of deldir::plot.deldir
showrect	see documentation of deldir::plot.deldir
fill	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 x.
...	see documentation of deldir::plot.deldir

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 *plotmeanshack*

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

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
```

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upper *upper*

Description

Returns the (d*(d-1)/2) x 2 matrix of the (i,j) indexes to the upper triangle of a d x 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
```

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