Package ‘a4Core’

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Type Package

Title Automated Affymetrix Array Analysis Core Package

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Description Automated Affymetrix Array Analysis Core Package

Depends methods, Biobase, glmnet

License GPL-3

biocViews Microarray

NeedsCompilation no

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confusionMatrix  Generic function to produce a confusion matrix (related to a classification problem)

Description

Generic function to produce a confusion matrix (related to a classification problem)

Usage

confusionMatrix(x, ...)

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simulateData

Simulate Data for Package Testing and Demonstration Purposes

Usage

simulateData(nCols = 40, nRows = 1000, nEffectRows = 5, nNoEffectCols = 5, betweenClassDifference = 1, withinClassSd = 0.5)

Arguments
	nCols
number of samples; currently this should be an even number
nRows
number of features (genes)
nEffectRows
number of differentially expressed features
nNoEffectCols
number of samples for which the profile of a differentially expressed feature will be set similar to the other class
betweenClassDifference
Average mean difference between the two classes to simulate a certain signal in the features for which an effect was introduced; the default is set to 1
withinClassSd
Within class standard deviation used to add a certain noise level to the features for which an effect was introduced; the default standard deviation is set to 0.5

Value

object of class ExpressionSet with the characteristics specified

Note

The simulation assumes the variances are equal between the two classes. Heterogeneity could easily be introduced in the simulation if this would be requested by the users.

Author(s)

W. Talloen and T. Verbeke

Examples

someEset <- simulateData(nCols = 40, nRows = 1000, nEffectRows = 5, nNoEffectCols = 5)
someEset
### Description

A top table is a rectangular object (e.g. data frame) which lists the top n most relevant variables.

### Usage

```r
topTable(fit, n, ...)
```

### Arguments

- **fit**: object for which to obtain a top table, generally a fit object for a given model class.
- **n**: number of features (variables) to list in the top table, ranked by importance.
- **...**: further arguments for specific methods.

### Author(s)

Tobias Verbeke

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### Description

Methods for `topTable`. `topTable` extracts the top n most important features for a given classification or regression procedure.

### Arguments

- **fit**: object resulting from a classification or regression procedure.
- **n**: number of features that one wants to extract from a table that ranks all features according to their importance in the classification or regression model; defaults to 10 for limma objects.

### Methods

- **glmnet and lognet**
  - glmnet objects are produced by `lassoClass` (a4Classif) or `lassoReg` (a4Base)
  - `fit = "glmnet", n = "numeric"` lognet objects are produced by `lassoClass` (a4Classif) or `lassoReg` (a4Base)
  - `fit = "elnet", n = "numeric"` lognet objects are produced by `lassoClass` (a4Classif) or `lassoReg` (a4Base)
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