Package 'ES'

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Type Package

Title Edge Selection

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Description Implementation of the Edge Selection Algorithm for undirected graph selection. The least angle regression-based algorithm selects edges of an undirected graph based on the projection of the current residuals on the two dimensional edge-planes. The algorithm selects symmetric adjacency matrix, which many other regression-based undirected graph selection procedures cannot do.

License GPL-2

NeedsCompilation no

Repository CRAN

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Contents

ES-package   *Edge Selection for Undirected Graphs*

Description

Implementation of the Edge Selection Algorithm

Details

Package:	ESpackage
Type:	Package
Version:	1.0
Date:	2013-06-13
License:	CRAN

Author(s)

Meng Hwee Victor Ong, Sanjay Chaudhuri

References

Edge Selection for Undirected Graphs

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cv.ES   *Edge Selection with Cross validation*

Description

Computes K-Fold cross validation based on mean squared prediction error.

Usage

```
cv.ES(x,object,K=10,M)
```

Arguments

x	Data Matrix. The columns represent the different variables, while the rows represent identically and independently distributed samples.
object	Lars object, generated from ES function.
K	Number of Folds in cross validation.
M	A vector of values that determine the points where cross validation are done. If not specified, the value of M will be determined using the object

Value

`cv.ES` picks a model which minimizes the mean squared prediction errors using the input vector M. `cv.ES` also pick a model with a mean squared prediction error less than or equals to the minimum mean square prediction plus its standard error.

References

Edge Selection for Undirected Graphs

See Also

`ES`, `ESpredict`

Examples

```
data(marks)
attach(marks)
object <- ES(marks)
cv.ES(marks,object)
detach(marks)
```

ES   *Edge Selection Algorithm*

Description

`ES` generates the entire sequence of coefficient estimates using Edge Selection Algorithm.

Usage

```
ES(u, maxstop)
```

Arguments

u	Data Matrix. The columns represent the different variables, while the rows represent identically and independently distributed samples.
maxstop	Number of edges selected before the algorithm stops. If it is not specified, the algorithm will run until all the variables are added.

Value

An object is returned, which includes the entire sequence of ES coefficient estimates, OLS estimates and the correlations of the first two edges that is added to the algorithm.

References

Edge Selection for Undirected Graphs

See Also

ESpredict, cv.ES

Examples

```
data(marks)
attach(marks)
object <- ES(marks)
detach(marks)
```

ESpredict   *ESpredict*

Description

ESpredict extract coefficient estimates from a fitted ES object.

Usage

```
ESpredict(object, c)
```

Arguments

object	Fitted ES object
c	A vector of values that indexes the path. Values should fall between 0 and the maximum of object$c1.

Value

Vector or Matrix of Coefficients estimates.

References

Edge Selection for Undirected Graphs

See Also

Es, cv.ES

Examples

```
data(marks)
attach(marks)
object <- ES(marks)
ESpredict(object,c=object$c1)
detach(marks)
```

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marks   *Mathematics Marks*

Description

Mathematic Marks from ggm package

Usage

```
data(marks)
```

Format

A data frame with 88 observations on the following 5 variables.

mechanics a numeric vector

vectors a numeric vector

algebra a numeric vector

analysis a numeric vector

statistics a numeric vector

Details

Mechanics and Vectors were closed book examinations. Algebra, Analysis and Statistics were open book examinations.

Source

Mardia, K.V., Kent, J.T. and Bibby, (1979). Multivariate analysis. London: Academic Press.

References

Whittaker, J. (1990). Graphical models in applied multivariate statistics. Chichester: Wiley.

Examples

```
data(marks)
```

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