Package: batchlasso (via r-universe)

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Type Package

Title BatchLASSO

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Author Louis Dijkstra [aut, cre]

Maintainer Louis Dijkstra <dijkstra@leibniz-bips.de>

Description A package for using the LASSO for ranking response-exposure pairs on the basis of the highest lambda for which they first appear in the active set

Depends R (>= 3.2.3), glmnet

License GPL-3

Encoding UTF-8

LazyData true

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Repository https://bips-hb.r-universe.dev

RemoteUrl https://github.com/bips-hb/batchlasso

RemoteRef HEAD

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batchLASSO *Batch LASSO*

Description

This function can be used to rank the response-exposure pairs from most to least "interesting". Simply using the resulting regression coefficients would be unwise, since the size of the coefficients cannot be compared from model to model. Instead, we use the tuning parameter, λ.

Each response variable in the given `response` matrix is regressed on all exposures in the matrix `exposure`. We determine for each exposure what the highest value of λ for which that variable is included for the first time in the regression model (i.e., its regression coefficient is non-zero). These λ-values can be compared across models.

Usage

```
batchLASSO(response, exposure, alpha = 1, verbose = TRUE)
```

Arguments

`response`	A binary matrix where each column is a response variable
`exposure`	A binary matrix where each column is an exposure
`alpha`	The elastic net mixing parameter (Default: 1.0 - LASSO)
`verbose`	Verbosity (Default: `TRUE`)

Value

A data frame with three columns

`response`	The response label (in case they are not given, they are simply numbered 1,2,3,...etc.)
`exposure`	The exposure label (in case they are not given, they are simply numbered 1,2,3,...etc.)
`highest_lambda`	The highest lambda for which the response-exposure pair where first added to the active set. The higher this value, the more "interesting" the pair

Examples

```
## Not run:
n <- 100 # no. of observations
r <- 5 # no. of response variables
e <- 10 # no. of exposures

# random response and exposure matrices
response <- matrix(rbinom(r*n, 1, 0.5), n, r)
exposure <- matrix(rbinom(e*n, 1, 0.5), n, e)

batchLASSO(response, exposure)

## End(Not run)
```

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