Package 'orthogonalize'

February 22, 2019

Type Package

Title Simple covariate residualization

Version 1.1

Date 2019-2-21

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Description Residualize an outcome variable based on a predictor set.

License GPL-3

Imports Rcpp (>= 0.12.18)

LinkingTo Rcpp, RcppArmadillo

RoxygenNote 6.1.0

Suggests testthat

R topics documented:

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orthogonalize   *Residualize covariates.*

Description

Provides functionality to create residual "orthogonal" scores via linear regression more quickly and conveniently than `lm`.

Usage

```
orthogonalize(formula, data, intercept = FALSE, group = NULL)
```

Arguments

`formula`	a `"character"` vector or an object of class `"formula"` specifying the 'response' variable to be residualized and a set of 'terms' to residualize the 'response' on, using linear regression.
`data`	a `"data.frame"` object containing the data set.
`intercept`	a `"logical"` value indicating whether or not to add the intercept term estimated by the regression model to the extracted residuals. Defaults to FALSE.
`group`	an optional `"numeric"` or `"factor"` vector that specifies subsets of the data for within-group residualization. Can also be a `"character"` value specifying the column name of the grouping variable if it is attached to the `"data.frame"` provided to the `data` argument. Defaults to NULL.

Details

This function is based on symbolic model representation via a formula, just like `lm`. The formula accepts a single 'response' separated by a `"~"` from a set of 'terms', which are themselves separated by a +. The formula is evaluated and the relevant data are provided to a OLS estimator where the 'response' is regressed on the 'terms'. The residuals of the 'response' are retained and returned by the function; the returned residuals of the 'response' variable can be said to be "orthogonalized" in respect to the 'terms'. If `group` is provided, the within-group 'response' residuals are returned.

Value

a numeric vector of the same length as the provided `data`.

Author(s)

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Examples

```
## Load the data:
data(iris)

## Orthogonalize "Petal.Width":
Petal.Width.Prime <- orthogonalize(
formula   = "Petal.Width ~ Petal.Length + Sepal.Length",
data      = iris,
intercept = TRUE
)

## Orthgonalize "Petal.Width" within "Species:
Petal.Width.Prime <- orthogonalize(
formula = "Petal.Width ~ .",
data    = iris,
group   = "Species"
)
```