Package 'olr'

January 8, 2020

Title Optimal Linear Regression

Version 1.1

Date 2020-01-07

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Description The optimal linear regression olr(), runs all the possible combinations of linear regression
equations. The olr() returns the equation which has the greatest adjusted R-
squared term or the greatest R-squared term based
on the user's discretion. Essentially, the olr() returns the best fit equation out of all the possi-
ble equations. R-squared increases
with the addition of an explanatory variable whether it is 'significant' or not, thus this was devel-
oped to eliminate that conundrum.
Adjusted R-squared is preferred to overcome this phenomenon, but each combina-
tion will still produce different results and this will
return the best one. Complimentary functions are included which list all of the equa-
tions, all of the equations in ascending order,
a function to give the user a specific model's summary, and the list of adjusted R-
squared terms & R-squared terms.
A 'Python' version is available at: <https://pypi.org/project/olr/>.

URL <https://github.com/MatHatter>, <https://pypi.org/project/olr/>

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Encoding UTF-8

Depends R (>= 2.10)

LazyData true

Imports plyr, utils, stats

RoxygenNote 6.1.1.9000

NeedsCompilation no

Repository CRAN

Date/Publication 2020-01-08 18:10:02 UTC

R **topics documented:**

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olr   *olr: Optimal Linear Regression*

Description

The main olr() runs all of the possible linear regression equation combinations, which are all of the combinations of dependent variables respect to the independent variable. In essence, the olr() returns the best fit linear regression model. The user can prompt the olr() to return either the best fit statistical summary of either the greatest adjusted R-squared, or the greatest R-squared term. R-squared increases with the addition of an explanatory variable whether it is 'significant' or not, thus this was developed to eliminate that conundrum. Adjusted R-squared is preferred to overcome this phenomenon, but each combination will still produce different results and this will return the best one.

Usage

```
olr(dataset, responseName = NULL, predictorNames = NULL,
  adjr2 = TRUE)

olrmodels(dataset, responseName = NULL, predictorNames = NULL)

olrformulas(dataset, responseName = NULL, predictorNames = NULL)

olrformulaorder(dataset, responseName = NULL, predictorNames = NULL)

adjr2list(dataset, responseName = NULL, predictorNames = NULL)

r2list(dataset, responseName = NULL, predictorNames = NULL)
```

Arguments

dataset	is defined by the user and points to the name of the dataset that is being used.
responseName	the response variable name defined as a string. For example, it represents a header in the data table.
predictorNames	the predictor variable or variables that are the terms that are to be regressed against the responseName. Place desired headers from the dataset in here as a character vector.
adjr2	adjr2 = TRUE returns the regression summary for the maximum adjusted R-squared term. adjr2 = FALSE returns the regression summary for the maximum R-squared term.

Details

Complimentary functions below follow the format: function(dataset, responseName = NULL, predictorNames = NULL)

olrmodels: returns the list of models accompanied by the coefficients. After typing in olrmodels(dataset,responseName,predictorNames), type the desired summary number to the right of the comma in the brackets: [,x] where x equals the desired summary number. For example, olrmodels(dataset,responseName,predictorNames)[,8]

olrformulas: returns the list of olr() formulas

olrformulasorder: returns the formulas with the predictors (dependent variables) in ascending order

adjr2list: list of the adjusted R-squared terms

r2list: list of the R-squared terms

When responseName and predictorNames are NULL, then the first column in the dataset is set as the responseName and the remaining columns are the predictorNames.

A 'Python' version is available at <https://pypi.org/project/olr>.

Value

The regression summary for the adjusted R-squared or the R-squared, specified with TRUE or FALSE in the olr().

Examples

```
file <- system.file("extdata", "oildata.csv", package = "olr", mustWork = TRUE)
oildata <- read.csv(file, header = TRUE)

dataset <- oildata
responseName <- 'OilPrices'
predictorNames <- c('SP500', 'RigCount', 'API', 'Field_Production', 'OperableCapacity', 'Imports')

olr(dataset, responseName, predictorNames, adjr2 = TRUE)
```

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