Package 'lookupTable'

October 13, 2022

Type Package

Title Look-Up Tables using S4

Version 0.1

Date 2015-08-17

Maintainer Enzo Jia <enzo.jia@gmail.com>

Description Fits look-up tables by filling entries with the mean or median values of observations
fall in partitions of the feature space. Partitions can be determined by user of the
package using input argument feature.boundaries, and dimensions of the feature space
can be any combination of continuous and categorical features provided by the data set.
A Predict function directly fetches corresponding entry value, and a default value is
defined as the mean or median of all available observations.
The table and other components are represented using the S4 class lookupTable.

License MIT + file LICENSE

LazyData TRUE

Imports dplyr, methods

Depends data.table

Suggests testthat

NeedsCompilation no

Author Enzo Jia [aut, cre],
Marc Maier [aut]

Repository CRAN

Date/Publication 2015-08-28 01:21:23

R topics documented:

---

initialize,lookupTable-method
Initialize and construct a lookupTable object

Description

Initialize and construct a lookupTable object

Usage

```
## S4 method for signature 'lookupTable'
initialize(.Object, df.input, response,
  feature.boundaries, features.con = character(0),
  features.cat = character(0), fill.method = "mean")
```

Arguments

.Object	the prototype object
df.input	training data set containing columns with names found in features.con and features.cat vectors
response	name of the response variable
feature.boundaries	
	a list of thresholds for each continuous feature (names contained in feature.con) to construct bins. Should use -Inf and Inf as the first and last values, respectively.
features.con	a vector of continuous feature names
features.cat	a vector of categorical feature names
fill.method	the method to fill entries of the table ('mean' or 'median')

Value

A lookupTable object with a table trained with df.input data

---

lookupTable-class   *An S4 class that defines the look-up table and all other components required for prediction using this table.*

Description

An S4 class that defines the look-up table and all other components required for prediction using this table.

Slots

table the look-up table with entries to be retrieved as prediction results

feature.con a vector of continuous feature names

feature.cat a vector of categorical feature names

feature.boundaries a list of boundaries for each input feature (inferred during construction from input data)

response the name of the response variable for the look-up table

default the default value for cells corresponding to a missing combination of input values

response.categories sequence of all categories (order-dependent) for the response variable, if it's categorical

---

predict.lookupTable *Predictions from a look-up table*

Description

predict method for lookupTable objects

Usage

```
## S3 method for class 'lookupTable'
predict(object, newdata, newparams = NULL, ...)
```

Arguments

object	a fitted lookupTable object
newdata	data.frame from which to evaluate predictions
newparams	new parameters to use in evaluating predictions
...	optional additional parameters. None are used at present.

Value

a numeric vector of predicted values

Examples

```
df.input <- cars
response <- 'dist'
feature.boundaries <- list(c(-Inf, 5, 10, 15, 20, 25, Inf))
features.con <- c('speed')
dist.table <- lookupTable(df.input, response, feature.boundaries, features.con)
df.test <- data.frame(speed = c(2, 23, 41, 5, 9, 8))
predict(dist.table, df.test)
```

Index