

Package ‘DidacticBoost’

April 19, 2016

Type Package

Title A Simple Implementation and Demonstration of Gradient Boosting

Version 0.1.1

Date 2016-04-19

Description A basic, clear implementation of tree-based gradient boosting designed to illustrate the core operation of boosting models. Tuning parameters (such as stochastic subsampling, modified learning rate, or regularization) are not implemented. The only adjustable parameter is the number of training rounds. If you are looking for a high performance boosting implementation with tuning parameters, consider the 'xgboost' package.

License GPL-3

Depends R (>= 3.1.1), rpart (>= 4.1-10)

Suggests testthat

URL <https://github.com/dashaub/DidacticBoost>

BugReports <https://github.com/dashaub/DidacticBoost/issues>

ByteCompile true

NeedsCompilation no

LazyData TRUE

RoxygenNote 5.0.1

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Repository CRAN

Date/Publication 2016-04-19 08:11:59

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fitBoosted

Simple Gradient Boosting

Description

Fit a simple, educational implementation of tree-based gradient boosting model.

Usage

```
fitBoosted(formula, data, iterations = 100, verbose = TRUE)
```

Arguments

formula	an object of class " formula " with a response but no interaction terms. The response variable should be a binomial factor that has values of 1 for a positive response or -1 for a negative or lack of response.
data	the dataframe containing the independent variables and the response
iterations	The number of training rounds for boosting.
verbose	should the current training round be printed to the console?

Value

An S3 object of class boosted. This includes

Examples

```
k <- kyphosis
k$Kyphosis <- factor(iffelse(k$Kyphosis == "present", 1L, -1L))
fit <- fitBoosted(Kyphosis ~ Age + Number + Start, data = k, iterations = 10)
```

is.boosted

Is the Object a Boosted Model

Description

Test the inheritance of an object

Usage

```
is.boosted(x)
```

Arguments

x	any R object
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Value

TRUE if the object is a boosted model

predict.boosted *Model Predictions*

Description

Apply a fitted boosted model to newdata to form predictions. If no newdata is included, returned the fitted values of the model.

Usage

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

Arguments

object	a boosted model returned from fitBoosted
newdata	the new independent variables to use for prediction. This should be a data frame.
...	additional arguments affecting the predictions produced (ignored).

Value

predict.boosted produces a numeric vector with the predicted classes from the boosted model.

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