# Package 'DecorateR'

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**Type** Package

**Title** Fit and Deploy DECORATE Trees

**Version** 0.1.2

**Imports** RWeka, RWekajars, rJava, stats

**Author** Matthias Bogaert

**Maintainer** Matthias Bogaert <Matthias.Bogaert@UGent.Be>

**Description** DECORATE (Diverse Ensemble Creation by Oppositional Relabeling
of Artificial Training Examples) builds an ensemble of J48 trees by recursively
adding artificial samples of the train-
ing data (``Melville, P., & Mooney, R. J. (2005) <DOI:10.1016/j.inffus.2004.04.001>'').

**License** GPL (>= 2)

**Depends** R(>= 2.10.0)

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.1.1

**NeedsCompilation** no

**Repository** CRAN

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## R topics documented:

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DECORATE                         *Binary classification with DECORATE (Melville and Mooney, 2005)*

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### Description

DECORATE (Diverse Ensemble Creation by Oppositional Relabeling of Artificial Training Examples) builds an ensemble of J48 trees by recursively adding artificial samples of the training data.

### Usage

```
DECORATE(x, y, C = 15, I = 50, R = 1, verbose = FALSE)
```

### Arguments

| | |
|---|---|
| x | a data frame of predictor (numeric, integer or factors). Character variables should be transformed to factors. |
| y | a vector of response labels. Only {0, 1} is allowed. |
| C | the desired ensemble size. Set to 15 as recommended by Melville and Mooney (2005). |
| I | the maximum number of iterations. Set to 50 as recommended by Melville and Mooney (2005). |
| R | the amount of articially generated examples, expressed as a fraction of the number of training examples. R is set to 1, meaning that the number of artificially created samples is equal to the training set size. |
| verbose | TRUE or FALSE. Should information be printed on the screen? |

### Value

an object of class DECORATE.

### Author(s)

Authors: Matthias Bogaert, Maintainer: <Matthias.Bogaert@UGent.Be>

### References

Melville, P., & Mooney, R. J. (2005). Creating diversity in ensembles using artificial data. Information Fusion, 6(1), 99-111. <doi: 10.1016/j.inffus.2004.04.001>

### See Also

[predict.DECORATE](predict.DECORATE)

## Examples

```
data(iris)
y <- as.factor(ifelse(iris$Species[1:100]=="setosa",0,1))
x <- iris[1:100,-5]
dec <- DECORATE(x = x, y = y)
```

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predict.DECORATE          *Predict method for DECORATE objects*

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## Description

Prediction of new data using DECORATE

## Usage

```
## S3 method for class 'DECORATE'
predict(object, newdata, type = "prob", all = FALSE, ...)
```

## Arguments

| | |
|---|---|
| object | an object of the class DECORATE, as created by the function DECORATE. |
| newdata | a data frame containing the same predictors as in the training phase. |
| type | character specifying whether to return the probabilites ('prob') or class ('class'). Default: prob. |
| all | Return the predictions per tree instead of the average (default = FALSE). |
| ... | Not used currently. |

## Value

vector containing the response probabilities.

## Examples

```
data(iris)
y <- as.factor(ifelse(iris$Species[1:100]=="setosa",0,1))
x <- iris[1:100,-5]
dec <- DECORATE(x = x, y = y)
predict(object=dec,newdata=x)
```

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