'AnDE'

July 24, 2013

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aode *aode*

Description

This function builds the model using the AODE algorithm which can then be used classification.

Usage

```
aode(train, mestimate = 1, weighted = FALSE,
  subsumption = FALSE, S = 100)
```

Arguments

train	data.frame : training data. It should be a data frame. AODE works only discretized data. It would be better to discreetize the data frame before passing it to this function.However, aode discretizes the data if not done before hand. It uses an R package called discretization for the purpose. It uses the well known MDL discretization technique.(It might fail sometimes)
mestimate	optional numeric
weighted	optional boolean
subsumption	optional boolean
S	optional numeric subsumption constant

Details

This is the training phase of the algorithm. Necessary count and probability tables are generated which will used for the prediction purpose.

Value

An object of class AODE

Author(s)

saiteja ranuva

Examples

```
require("datasets")
aode(iris,mestimate=1)
aode(iris)
aode(iris,weighted=TRUE)
```

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calWeight *calWeight*

Description

This function calculates mutual information between the attr and class.

Usage

```
calWeight(aode)
```

Arguments

aode	list. this is the list which has all the required variables in it.

Details

This function is called when weighted flag is set

Value

aode list. updated value

Author(s)

saiteja ranuva

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cutX *cutX*

Description

This function takes in a data frame to be discretized. The data type of the columns are important. Only the numeric columns are discretized.

Usage

```
cutX(data, cutp)
```

Arguments

data	data.frame. This data frame is discretized and returned.
cutp	list - A list of cutp points obtained from training data

Details

This uses the cut points generated while discretizing training data to discretize test data

Value

data data.frame. This the discretized data frame

Author(s)

saiteja ranuva

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discretizer *discretizer*

Description

This function takes in a data frame to be discretized. The data type of the columns are important. Only the numeric columns are discretized.

Usage

```
discretizer(data)
```

Arguments

data	data.frame. This data frame is discretized and returned.

Details

Here we use Fayyad's mdl discretization method. Discretizing data by MDL method as implemented in the package 'discretization'

Value

data data.frame. This the discretized data frame

Author(s)

saiteja ranuva

distributionForInstance *distributionForInstance*

Description

predicts class of a given instance based on the model

Usage

```
distributionForInstance(x, aode)
```

Arguments

x	instance to be classified
aode	list. this is the list which has all the required variables in it.

Details

details to be added

Value

class integer predicted class of the instance

Author(s)

sai teja ranuva

---

indexCalc *fun1*

Description

Calculates all the array and matrix indices required.

Usage

```
indexCalc(aode)
```

Arguments

aode	list. this is the list which has all the required variables in it.

Details

Details - add later

Value

a list

Author(s)

sai teja ranuva

See Also

setVar

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mdl *mdl*

Description

This function takes in a data frame to be discretized. The data type of the columns are important. Only the numeric columns are discretized.

Usage

```
mdl(data)
```

Arguments

data	data.frame. This data frame is discretized and returned.

Details

Here we use Fayyad's mdl discretization method. Discretizing data by MDL method as implemented in the package 'discretization'

Value

list of cut points and the discretized data frame

Author(s)

saiteja ranuva

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predict.AODE *predict*

Description

This is a generic function. This function predicts the class of the test data and returns a vector of predicted values.

Usage

```
## S3 method for class 'AODE'
predict(object, test, ...)
```

Arguments

object	object of class AODE
test	test data frame. If the training data was discretized, then the same cut points shall be used to discretize the test data. So obviously if the training was not discretized, test data should also not be discretized.
...	extra arguments which might be needed in future

Details

Written in line with the E1071 package.

Value

class vector containing the predicted class distribution of the test data

Author(s)

sai teja ranuva

Examples

```
data<-iris
ode<-aode(data)
predict(ode,iris)
```

---

setVar *setVar*

Description

sets the required variables

Usage

```
setVar(aode)
```

Arguments

aode	list. this is the list which has all the required variables in it.

Details

calculates the required space for indices and allocates

Value

aode list updated value of the list

Author(s)

sai teja ranuva

training *training*

Description

Calculates the count matrices.

Usage

```
training(aode)
```

Arguments

aode	list. this is the list which has all the required variables in it.

Details

class parent count and class parent child count are calculated

Value

aode list. updated value

Author(s)

sai teja ranuva

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