Package 'BigKnn'

February 5, 2016

Type Package

Title Large Scale K-Nearest Neighbor Classifier using the Lucene Search Engine.

Version 0.0.1

Date 2016-02-05

Author Martijn J. Schuemie

Maintainer Martijn Schuemie <schuemie@ohdsi.org>

Description A large scale k-nearest neighbor classifier using the Lucene search engine.

Imports rJava,
Cyclops,
PatientLevelPrediction

License Apache License

RoxygenNote 5.0.1

R topics documented:

`BigKnn` *BigKnn*

Description

BigKnn

buildKnn *Build a K-nearest neighbor (KNN) classifier*

Description

buildKnn loads data from two ffdf objects, and inserts them into a KNN classifier.

Usage

```
buildKnn(outcomes, covariates, indexFolder, overWrite = TRUE,
  checkSorting = TRUE, checkRowIds = TRUE, quiet = FALSE)
```

Arguments

outcomes	A ffdf object containing the outcomes with predefined columns (see below).
covariates	A ffdf object containing the covariates with predefined columns (see below).
indexFolder	Path to a local folder where the KNN classifier index can be stored.
checkSorting	Check if the data are sorted appropriately, and if not, sort.
checkRowIds	Check if all rowIds in the covariates appear in the outcomes.
quiet	If true, (warning) messages are surpressed.
overwrite	Automatically overwrite if an index already exists?

Details

These columns are expected in the outcome object:

rowId	(integer)	Row ID is used to link multiple covariates (x) to a single outcome (y)
y	(real)	The outcome variable

These columns are expected in the covariates object:

rowId	(integer)	Row ID is used to link multiple covariates (x) to a single outcome (y)
covariateId	(integer)	A numeric identifier of a covariate
covariateValue	(real)	The value of the specified covariate

Note: If checkSorting is turned off, the covariate table should be sorted by rowId.

Value

Nothing

predictKnn *Predict using a K-nearest neighbor (KNN) classifier*

Description

predictKnn uses a KNN classifier to generate predictions.

Usage

```
predictKnn(covariates, indexFolder, k = 1000, weighted = TRUE,
  checkSorting = TRUE, quiet = FALSE)
```

Arguments

covariates	A ffdf object containing the covariates with predefined columns (see below).
indexFolder	Path to a local folder where the KNN classifier index can be stored.
k	The number of nearest neighbors to use to predict the outcome.
weighted	Should the prediction be weigthed by the (inverse of the) distance metric?
checkSorting	Check if the data are sorted appropriately, and if not, sort.
quiet	If true, (warning) messages are surpressed.

Details

These columns are expected in the covariates object:

rowId	(integer)	Row ID is used to link multiple covariates (x) to a single outcome (y)
covariateId	(integer)	A numeric identifier of a covariate
covariateValue	(real)	The value of the specified covariate

Note: If checkSorting is turned off, the covariate table should be sorted by rowId.

Value

A data.frame with two columns:

rowId	(integer)	Row ID is used to link multiple covariates (x) to a single outcome (y)
prediction	(real)	A number between 0 and 1 representing the probability of the outcome

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