

Package ‘abodOutlier’

August 29, 2016

Title Angle-Based Outlier Detection

Version 0.1

Author Jose Jimenez <jose@jimenezluna.com>

Maintainer Jose Jimenez <jose@jimenezluna.com>

Description Performs angle-based outlier detection on a given dataframe. Three methods are available, a full but slow implementation using all the data that has cubic complexity, a fully randomized one which is way more efficient and another using k-nearest neighbours. These algorithms are specially well suited for high dimensional data outlier detection.

Depends cluster, R (>= 3.1.2)

License MIT + file LICENSE

LazyData true

Encoding UTF-8

NeedsCompilation no

Repository CRAN

Date/Publication 2015-08-31 14:31:42

R topics documented:

abod	1
abodoutlier	2

Index	4
--------------	----------

abod	<i>Angle-Based Outlier Factor</i>
------	-----------------------------------

Description

Computes angle-based outlier factor for each observation in the dataset

Usage

```
abod(data, method = "complete", n_sample_size = trunc(nrow(data)/10), k = 15)
```

Arguments

data	Dataframe in which to compute angle-based outlier factor.
method	Method to perform. 'complete' will use the entire dataset (cubic complexity) to compute abof. 'randomized' will use a random sample of the data of size 'n_sample_size'. 'knn' will compute abof among 'k' nearest neighbours.
n_sample_size	Number of random observations to choose in randomized method.
k	Number of nearest neighbours to choose in knn method.

Details

Please note that 'knn' has to compute an euclidean distance matrix before computing abof.

Value

Returns angle-based outlier factor for each observation. A small abof respect the others would indicate presence of an outlier.

Author(s)

Jose Jimenez <jose@jimenezluna.com>

References

[1] Angle-Based Outlier Detection in High-dimensional Data. KDD 2008. Hans-Peter Kriegel, Matthias Schubert, Arthur Zimek. (<http://www.dbs.ifi.lmu.de/Publikationen/Papers/KDD2008.pdf>)

Examples

```
abod(faithful, method = "randomized", n_sample_size = 5)
abod(faithful, method = "knn", k = 5)
```

Description

Performs angle-based outlier detection on data. A complete, a randomized and a knn based methods are available.

Package: abodoutlier
Type: Package
Version: 0.1
Date: 2015-08-30
License: MIT License
Maintainer: Jose Jimenez <jose@jimenezluna.com>

Index

abod, [1](#)
abodoutlier, [2](#)