

Package ‘RcppMLPACK’

April 21, 2020

Type Package

Title 'Rcpp' Integration for the 'MLPACK' Library

Version 1.0.10-7

Date 2020-04-17

Author Qiang Kou, Ryan Curtin

Maintainer Qiang Kou <qkou@umail.iu.edu>

Description 'MLPACK' is an intuitive, fast, scalable C++ machine learning library, meant to be a machine learning analog to 'LAPACK'. It aims to implement a wide array of machine learning methods and function as a Swiss army knife for machine learning researchers: 'MLPACK' is available from <<http://www.mlpack.org/>>; sources are included in the package.

SystemRequirements A C++11 compiler. Versions 4.8.*, 4.9.* or later of GCC will be fine.

License LGPL (>= 2)

Depends R (>= 3.3.0)

Imports Rcpp (>= 0.12.8)

LinkingTo Rcpp, RcppArmadillo, BH

URL <https://github.com/thirdwing/RcppMLPACK1>, <http://www.mlpack.org/>

BugReports <https://github.com/thirdwing/RcppMLPACK1/issues>

NeedsCompilation yes

Repository CRAN

Date/Publication 2020-04-21 07:40:03 UTC

R topics documented:

RcppMLPACK-package	2
mlKmeans	2
RcppMLPACK.package.skeleton	3

Index	5
--------------	----------

RcppMLPACK-package *Rcpp Integration for MLPACK Library*

Description

The package eases the integration of MLPACK types with R. MLPACK is an intuitive, fast, scalable C++ machine learning library, meant to be a machine learning analog to LAPACK.

Author(s)

For RcppMLPACK: Qiang Kou

For MLPACK: Ryan Curtin

Maintainer: Qiang Kou <qkou@uemail.iu.edu>

References

MLPACK project: <http://www.mlpack.org/>

mlKmeans *kmeans from MLPACK*

Description

kmeans example for using MLPACK with R.

Usage

```
mlKmeans(X, y)
```

Arguments

X	data matrix.
y	number of clusters.

Details

This is a kmeans example using RcppMLPACK. It uses the Kmeans method in MLPACK and integrates with R.

Value

mlKmeans returns a list with cluster assignment:

Author(s)

For RcppMLPACK: Qiang Kou

For MLPACK: Ryan Curtin

References

MLPACK project: <http://www.mlpack.org/>

Examples

```
data(trees, package="datasets")
mlkmeans(t(trees), 3)
```

RcppMLPACK.package.skeleton

Create a skeleton for a new package that intends to use RcppMLPACK

Description

RcppMLPACK.package.skeleton automates the creation of a new source package that intends to use features of RcppMLPACK.

It is based on the [package.skeleton](#) function which it executes first.

Usage

```
RcppMLPACK.package.skeleton(name = "anRpackage", list = character(),
environment = .GlobalEnv, path = ".", force = FALSE,
code_files = character(), example_code = TRUE)
```

Arguments

name	See package.skeleton
list	See package.skeleton
environment	See package.skeleton
path	See package.skeleton
force	See package.skeleton
code_files	See package.skeleton
example_code	If TRUE, example c++ code using RcppMLPACK is added to the package

Details

In addition to [package.skeleton](#) :

The 'DESCRIPTION' file gains a Depends line requesting that the package depends on Rcpp and RcppArmadillo and a LinkingTo line so that the package finds Rcpp and RcppArmadillo header files.

The 'NAMESPACE', if any, gains a useDynLib directive.

The 'src' directory is created if it does not exist and a 'Makevars' file is added setting the environment variable 'PKG_LIBS' to accommodate the necessary flags to link with the Rcpp library.

If the example_code argument is set to TRUE, example files 'RcppMLPACK.h' and 'kmeans.cpp' are also created in the 'src'. An R file 'RcppExports.R' is expanded in the 'R' directory, the mlkmeans function defined in this file makes use of the C++ function 'mlkmeans' defined in the C++ file. These files are given as an example and should eventually be removed from the generated package.

Value

Nothing, used for its side effects

References

Read the *Writing R Extensions* manual for more details.

Once you have created a *source* package you need to install it: see the *R Installation and Administration* manual, [INSTALL](#) and [install.packages](#).

See Also

[package.skeleton](#)

Examples

```
## Not run:  
RcppMLPACK.package.skeleton("foobar")  
  
## End(Not run)
```

Index

*Topic **interface**

RcppMLPACK-package, 2

*Topic **package**

RcppMLPACK-package, 2

*Topic **programming**

RcppMLPACK-package, 2

RcppMLPACK.package.skeleton, 3

INSTALL, 4

install.packages, 4

mlkmeans, 2

package.skeleton, 3, 4

RcppMLPACK (RcppMLPACK-package), 2

RcppMLPACK-package, 2

RcppMLPACK.package.skeleton, 3