Package ‘RnavGraphImageData’

February 19, 2015

Type Package

Title Some image data used in the RnavGraph package demos

Version 0.0.3

Date 2013-04-30

Author Adrian R. Waddell and R. Wayne Oldford

Maintainer Adrian Waddell <adrian@wadde11.ch>

URL http://www.navgraph.com

Description Image data used as examples in the RnavGraph R package.
            See the demos in the RnavGraph package.

Depends R (>= 2.10.0)

Suggests RnavGraph

License GPL-2

NeedsCompilation no

Repository CRAN

Date/Publication 2013-05-01 09:23:05

R topics documented:

  binaryalphadigits .................................................. 2
  digits ............................................................... 2
  faces ............................................................... 3
  frey ................................................................. 3
  L2Distance ........................................................... 4
  ordalphadigits ....................................................... 5
  ordfrey ............................................................... 5

Index 6
### Binary Alphadigits

**Description**

Binary 20x16 digits of "0" through "9" and capital "A" through "Z". 39 examples of each class. From Simon Lucas' (sml@essex.ac.uk), Algoval system.

**Usage**

`binaryalphadigits`

**Format**

Data frame with one image per row.

**Source**

[http://www.cs.nyu.edu/~roweis/data.html](http://www.cs.nyu.edu/~roweis/data.html)

---

### USPS Handwritten Digits

**Description**

8-bit 16x16 grayscale images of "0" through "9"; 1100 examples of each class.

**Usage**

`digits`

**Format**

Data frame with one image per column.

**Source**

[http://www.cs.nyu.edu/~roweis/data.html](http://www.cs.nyu.edu/~roweis/data.html)
Description

Grayscale faces 8 bit [0-255], a few images of several different people.
400 total images, 64x64 size.
From the Olivetti database at ATT.

Usage

faces

Format

Data frame with one image per column.

Source

http://www.cs.nyu.edu/~roweis/data.html

frey  Frey Face

Description


Usage

frey

Format

Data frame with one image per column.

Source

http://www.cs.nyu.edu/~roweis/data.html
L2Distance

Euclidean distances between vector in A and B

Description

This fully vectorized (VERY FAST!) m-file computes the Euclidean distance between two vectors by:

\[ \| A - B \| = \sqrt{ \| A \|^2 + \| B \|^2 - 2 \cdot A \cdot B } \]

Usage

\[ \text{L2Distance}(a, b, df = 0) \]

Arguments

- **a**: Either a matrix or a vector.
- **b**: Either a matrix or a vector.
- **df**: \( df = 1 \), force diagonals to be zero; \( 0 \) (default), do not force.

Value

For A - (DxM) matrix B - (DxN) matrix

\[ \text{L2Distance} \text{ returns a matrix of size } (MxN). \]

Note

This function was transcribed by the package maintainers from a Matlab to an R function.

Author(s)

Roland Bunschoten

Examples

\[ A = \text{matrix(runif(400*100),ncol=100)} \]
\[ B = \text{matrix(runif(400*200),ncol=200)} \]
\[ d = \text{L2Distance}(A,B) \]
ordalphadigits

Dissimilarity object of class 'isomap' for Binary Alphadigits data

Description
Dissimilarity object of class 'isomap'. Returned from:

isomap(vegdist(binaryalphadigits), k=6).

Usage
ordalphadigits

Format
Object of class 'isomap'.

ordfrey

Dissimilarity object of class 'isomap' for Frey Faces data

Description
Dissimilarity object of class 'isomap'. Returned from:

isomap(vegdist(t(frey), method="euclidean"), k = 12, ndim=6, fragmentedOK = TRUE)

Usage
ordfrey

Format
Object of class 'isomap'.


Index

*Topic datasets
  binaryalphadigits, 2
digits, 2
faces, 3
frey, 3
ordalphadigits, 5
ordfrey, 5

binaryalphadigits, 2
digits, 2
faces, 3
frey, 3
L2Distance, 4
ordalphadigits, 5
ordfrey, 5