Package 'pacviz'

October 14, 2022

Title Pac-Man Visualization Package

Version 1.0.2

Description Provides a broad-view perspective on data via linear mapping of data onto a radial coordinate system. The package contains functions to visualize the residual values of linear regression and Cartesian data in the defined radial scheme. See the 'pacviz' documentation page for more information: <https://pacviz.sriley.dev/>.

License MIT + file LICENSE

Depends R (>= 4.0.0)

Imports circlize, e1071, graphics, plotrix, stats, utils

Suggests knitr, markdown

VignetteBuilder knitr

Encoding UTF-8

RoxygenNote 7.1.1

NeedsCompilation no

Author Spencer Riley [aut, cre]

Maintainer Spencer Riley <academic@sriley.dev>

Repository CRAN

Date/Publication 2022-08-16 07:10:02 UTC

R topics documented:

deg2rad *Degree angle conversion*

Description

Conversion between degrees and radians

Usage

```
deg2rad(deg)
```

Arguments

deg	Angle in degrees

Value

Angle in radians

linMap *Linear map*

Description

A function that will map a range of values to a different set of values.

Usage

```
linMap(x, i, f)
```

Arguments

x	Range of values to be mapped
i	Lowest value
f	Largest value

Value

A set of values spanning from i to f

`pac.plot` *Pac-Man plotting function*

Description

A method of plotting traditional Cartesian data, based on a restricted radial coordinate system, while preserving the information.

Usage

```
pac.plot(x, y, title, taxis, raxis, color1 = "gold")
```

Arguments

`x, y`	Numeric data
`title`	Figure title
`taxis, raxis`	Vector with the first entry being the axis label and the second entry being units
`color1`	Color value as string or rgb

Value

Pac-Man SVM

Examples

```
# Generic Pac-Man plot
data("cars")
pac.plot(cars$dist,cars$speed, 'Example 1', c("Distance", "m"), c("Speed", "m/s"))
```

`pac.resid` *Pac-Man Residual Function*

Description

A visualization technique in R for regression analysis results, specifically residual values, based on a restricted radial coordinate system. It provides a broad view perspective on the performance of regression models, and supports most model inputs.

Usage

```
pac.resid(
  x,
  y,
  title,
  taxis,
  model = lm(y ~ x, data = data.frame(x, y)),
  color1 = "gold",
  standardize = FALSE
)
```

Arguments

x, y	Numeric data
title	Figure title
taxis	Vector with the first entry being the axis label and the second entry being units
model	An object for which the extraction of model residuals is meaningful.
color1	Color value as string or rgb
standardize	Boolean to standardize the residual value

Value

Pac-Man residual plot

Examples

```
data("cars")
x <- cars$dist
y <- cars$speed
pac.resid(x,y, 'Example 2',
            c("Temperature",'degC'),
            color1="lightblue",
            standardize=TRUE)
```

---

rad2deg *Radian angle conversion*

Description

Conversion between radians and degrees

Usage

```
rad2deg(rad)
```

Arguments

rad	Angle in radians

Value

Angle in degrees

---

svm.partition *Machine learning data partition*

Description

A method of partitioning data between training and testing sets based on the fraction of data used for training

Usage

```
## S3 method for class 'partition'
svm(x, y, l, train_size = 0.7, rand_state = sample(1:2^15, 1))
```

Arguments

x, y	Numeric data
l	Numeric labels data
train_size	Fraction of total data that the SVM will train on
rand_state	Value of the random state used to set the seed

Value

Two data frames and a list of indicies for the training set

---

unit_format *Unit formatting*

Description

Converts unit inputs into a format that can be displayed. Support is restricted to ‘degC‘, ‘degF‘.

Usage

```
unit_format(unit)
```

Arguments

unit	Unit input

Value

A list of formatted units

Index