Package ‘pacviz’
March 12, 2023

Title Pac-Man Visualization Package
Version 1.0.3
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/>.
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VignetteBuilder knitr
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### deg2rad

**Degree angle conversion**

**Description**
Conversion between degrees and radians

**Usage**

deg2rad(deg)

**Arguments**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>deg</td>
<td>Angle in degrees</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>Range of values to be mapped</td>
</tr>
<tr>
<td>i</td>
<td>Lowest value</td>
</tr>
<tr>
<td>f</td>
<td>Largest value</td>
</tr>
</tbody>
</table>

**Value**
A set of values spanning from i to f
pac.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**

```r
pac.partition(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 indices for the training set.

---

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**

```r
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)
**Description**
Conversion between radians and degrees

**Usage**
\[
\text{rad2deg}(\text{rad})
\]

**Arguments**
- **rad**: Angle in radians

**Value**
Angle in degrees

---

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

**Usage**
\[
\text{unit_format}(\text{unit})
\]

**Arguments**
- **unit**: Unit input

**Value**
A list of formatted units
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