Package 'tidydr'

May 8, 2026

Title Unify Dimensionality Reduction Results

Version 0.0.6

Description Dimensionality reduction (DR) is widely used in many domain for analyzing and visualizing high-dimensional data. 'tidydr' provides uniform output and is compatible with multiple methods, including 'prcomp', 'mds', 'Rtsne'. etc.

Imports cluster, ggfun, ggplot2, grid, rlang, stats, utils

Suggests knitr, rmarkdown, prettydoc, SingleCellExperiment, SummarizedExperiment

VignetteBuilder knitr

ByteCompile true

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URL https://github.com/YuLab-SMU/tidydr/

BugReports https://github.com/YuLab-SMU/tidydr/issues

Encoding UTF-8

RoxygenNote 7.3.2

NeedsCompilation no

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Repository CRAN

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`available_methods` *List dimensionality reduction methods currently available*

Description

This function shows available methods that worked for `dr()` function.

Usage

```
available_methods(method = "all")
```

Arguments

`method`	one of 'data', 'distance' or 'all' (default)

Value

A character vector of available DR methods

Author(s)

Lang Zhou and Guangchuang Yu

Examples

```
available_methods()
```

`dr` *dr*

Description

dimensional reduction

Usage

```
dr(data, fun, ...)
```

Arguments

data	input data
fun	function to perform dimensional reduction
...	additional parameters passed to 'fun'

Details

This function call the user-provided function ('fun') to perform dimensional reduction on the input data ('data')

Value

a DrResult object, which contains 'data' (original data), 'drdata' (coordination after dimensionality reduction), eigenvalue (standard deviation explained by each dimension) and stress (evaluate the effect of dimensionality reduction)

Author(s)

Guangchuang Yu

Examples

```
x = dr(iris[,1:4], prcomp)
autoplot(x, aes(color=.group), metadata=iris$Species)
```

---

dr_extract *dr_extract*

Description

dr_extract generic

Usage

```
dr_extract(result)
```

Arguments

result	DrResult object

Value

a list that contains components to construct a 'DrResult' object.

Author(s)

Guangchuang Yu

element_line2 *element_line2*

Description

element_line2 for drawing shorten axis lines

Usage

```
element_line2(
  colour = NULL,
  size = NULL,
  linetype = NULL,
  lineend = NULL,
  color = NULL,
  arrow = NULL,
  inherit.blank = FALSE,
  id,
  xlength = 0.3,
  ylength = 0.3,
  ...
)
```

Arguments

colour	line colour
size	line size in pts
linetype	line type
lineend	line end style (round, butt, square)
color	aliase to colour
arrow	arrow specification, as created by 'grid::arrow()'
inherit.blank	whether inherit 'element_blank'
id	1 or 2, 1 for axis.line.x.bottom and 2 for axis.line.y.left, only these two axes supported
xlength	length of x axis
ylength	length of y axis
...	additional parameters

Value

element_line2 object, which is a tailored element_line object

Author(s)

Guangchuang Yu

nk *nk*

Description

Choose best K (number of clusters)

Usage

```
nk(data, k)
```

Arguments

data	input data (a matrix or data frame)
k	a vector of candidate number of clusters

Details

This function calculate the silhouette scores of each K (number of clusters). The output object can be used to choose the best K (via `summary()` or `autoplot()` methods)

Value

a `silinfo` object, which contains 'data' (original data), 'silinfo' (silhouette scores), and k (the input k vector)

Author(s)

Guangchuang Yu

Examples

```
x <- nk(iris[,-5], 2:8)
summary(x)
# to visualize the average silhouete score (y axis) with k (x axis)
autoplot(x)
# to visualize a PCA plot color by the choosing k
autoplot(x, k=3)
```

theme_dr *theme_dr*

Description

Dimensional reduction scatter plot axis theme

Usage

```
theme_dr(
  xlength = 0.3,
  ylength = 0.3,
  arrow = grid::arrow(length = unit(0.15, "inches"), type = "closed")
)
```

Arguments

xlength	length of x axis
ylength	length of y axis
arrow	arrow specification, as created by 'grid::arrow()'

Value

a theme object with shorten axes

Author(s)

Guangchuang Yu

theme_noaxis *theme_noaxis*

Description

theme that remove axis

Usage

```
theme_noaxis(...)
```

Arguments

...	additional theme setting

Value

a theme object that disable axes

Author(s)

Guangchuang Yu

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