

Package ‘nestedpp’

January 5, 2023

Type Package

Title Performance Profiles and Nested Performance Profiles

Version 0.2.0

Description Library to plot performance profiles (Dolan and More (2002) <[doi:10.1007/s101070100263](https://doi.org/10.1007/s101070100263)>) and nested performance profiles (Hekmati and Mirhajianmoghadam (2019) <[doi:10.19139/soic-2310-5070-679](https://doi.org/10.19139/soic-2310-5070-679)>) for a given data frame.

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Language en-US

Imports ggplot2, reshape2, xtable

RoxygenNote 7.2.3

NeedsCompilation no

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Repository CRAN

Date/Publication 2023-01-05 16:10:02 UTC

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generate_random_example

Generates random data frame

Description

Function that returns a random data frames

Usage

```
generate_random_example(seed = 1234, nrow = 10, ncol = 5, withNA = TRUE)
```

Arguments

seed	seed for random generation
nrow	number of rows
ncol	number of columns
withNA	bool to indicate if we want to include some NA values in the data frame

Value

a data frame with random data

Examples

```
example_data = generate_random_example(seed = 123456, nrow = 15, ncol=6)
```

gmean

geometric mean function

Description

Function to compute the geometric mean

Usage

```
gmean(data, ...)
```

Arguments

data	vector with the data
...	further arguments passed to or from other methods

Value

geometric mean value

Examples

```
gmean(1:10)
```

nested_performance_profile

Nested performance profile function

Description

Function that returns a ggplot object with the corresponding nested performance profile

Usage

```
nested_performance_profile(  
  data,  
  minimize = TRUE,  
  logbase = 1,  
  legend_title = "",  
  best_rule = "winner",  
  xlab = expression(tau),  
  ylab = expression(rho),  
  xmax = 0,  
  colors = c(),  
  plot = TRUE,  
  xgrid = c()  
)
```

Arguments

data	data frame with the data
minimize	true if lower values mean best performance and false otherwise
logbase	base of the logarithm used to represent nested performance profiles
legend_title	title for the legend
best_rule	option to choose the best solver eliminated in each iteration ("winner", "mean", "gmean", "median" or custom function)
xlab	x axis label
ylab	y axis label
xmax	maximum value of xaxis
colors	vector with the colors of each configuration
plot	bool to display the plot or not
xgrid	vector for using it as grid in ratios

Value

ggplot object with the corresponding nested performance profile

Examples

```
example_data = generate_random_example(seed = 1234)
nested_performance_profile(example_data)
```

number_of_na	<i>number of Na's</i>
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Description

Function to compute the number of Na's

Usage

```
number_of_na(data, ...)
```

Arguments

data	vector with the data
...	further arguments passed to or from other methods

Value

number of Na's

Examples

```
number_of_na(1:10)
```

performance_profile	<i>Performance profile function</i>
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Description

Function that returns a ggplot object with the corresponding performance profile

Usage

```
performance_profile(  
  data,  
  minimize = TRUE,  
  logbase = 1,  
  legend_title = "",  
  xlab = expression(tau),  
  ylab = expression(rho),  
  xmax = 0,  
  colors = c(),  
  plot = TRUE,  
  xgrid = c()  
)
```

Arguments

data	data frame with the data
minimize	true if lower values mean best performance and false otherwise
logbase	base of the logarithm used to represent performance profiles
legend_title	title for the legend
xlab	x axis label
ylab	y axis label
xmax	maximum value of xaxis
colors	vector with the colors of each configuration
plot	bool to display the plot or not
xgrid	vector for using it as grid in ratios

Value

ggplot object with the corresponding performance profile

Examples

```
example_data = generate_random_example(seed = 1234)  
performance_profile(example_data)
```

performance_table	<i>Table function</i>
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Description

Function to generate a table with different metrics

Usage

```
performance_table(data, tolatex = FALSE)
```

Arguments

data	data frame with the data
tolatex	true to print the latex code of the table

Value

the data frame with the metrics

Examples

```
example_data = generate_random_example(seed = 1234)
table(example_data)
```

q1

1st quartile function

Description

Function to compute the first quartile

Usage

```
q1(data, ...)
```

Arguments

data	vector with the data
...	further arguments passed to or from other methods

Value

1st quartile value

Examples

```
q1(1:10)
```

q3

3st quartile function

Description

Function to compute the third quartile

Usage

```
q3(data, ...)
```

Arguments

data	vector with the data
...	further arguments passed to or from other methods

Value

3st quartile value

Examples

```
q3(1:10)
```

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