

Package: rutabaga (via r-universe)

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Type Package

Title Simple R Tools for Analysis and Visualizations

Version 0.1.7

Description Provides functions (R, C++) to speed up array calculations. Includes various tools for prettier visualizations via R base plots.

License GPL-3

Encoding UTF-8

LazyData true

URL <https://github.com/dipterix/rutabaga>

BugReports <https://github.com/dipterix/rutabaga/issues>

Depends R (>= 3.5)

Imports utils, stats, grDevices, graphics, methods, magrittr, stringr (>= 1.3.1), digest, dplyr

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Repository <https://dipterix.r-universe.dev>

RemoteUrl <https://github.com/dipterix/rutabaga>

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add_points	<i>Same As Points, But Can Be Jittered (maturing)</i>
------------	---

Description

Same As Points, But Can Be Jittered
(maturing)

Usage

```
add_points(x, y, jitr_x = 0, pch = 19, ...)
```

Arguments

x, y	plot data
jitr_x	jitter shift size for x
pch	data point type, default is 19, See points
...	other params to jitr

as_pdf	<i>pdf wrapper that evaluates an arbitrary expression.</i>
--------	--

Description

pdf wrapper that evaluates an arbitrary expression.

Usage

```
as_pdf(fname, w, h, expr, TEST = FALSE, bg = "white")
```

Arguments

fname	file path
w	the requested width of the PDF
h	the requested height of the PDF
expr	the expression to evaluate to produce the plot
TEST	if FALSE (the default) print to PDF, otherwise print to the current graphics device
bg	set the background color of the PDF, defaults to 'white'

Value

the output of the resulting expression (the plot is likely produced by side effect but may additionally 'return' a value)

`as_title`*Make nice plot titles*

Description

Make nice plot titles

Usage

```
as_title(x, ...)  
  
## S3 method for class 'formula'  
as_title(x, ...)  
  
## Default S3 method:  
as_title(  
  x,  
  capitalize_all = TRUE,  
  excluded = c("is", "are", "vs", "v.s.", "from", "of", "be", "for", "over"),  
  ...  
)  
  
## S3 method for class 'fres'  
as_title(x, ...)  
  
## S3 method for class 'tres'  
as_title(x, ...)
```

Arguments

<code>x</code>	title content
<code>...</code>	pass to other methods
<code>capitalize_all</code>	make the first letter cap
<code>excluded</code>	exclude making first letter cap, numeric vector

Examples

```
## Not run:  
# Display normal title  
plot_clean(1,1, main = as_title('this is title'))  
  
# Only capitalize the first character  
plot_clean(1,1, main = as_title('this is title', capitalize_all = F))  
  
# What if title is a formula  
plot_clean(1,1, main = as_title(p[value](beta[1]) < ~.(0.01) ~ ' is significant'))
```

```
# Display t-statistics
plot_clean(1,1)
t_stat = get_t(rnorm(10))
title(main=as_title(t_stat))

## End(Not run)
```

cbind_list	<i>Make cbind magrittr compatible (stable)</i>
------------	--

Description

Make cbind magrittr compatible (stable)

Usage

```
cbind_list(ll)
```

Arguments

ll the list to bind, each element will be a column

clip_x	<i>Ensure Data Are Within Some Bounds (stable)</i>
--------	--

Description

Ensure Data Are Within Some Bounds
(stable)

Usage

```
clip_x(x, lim)
```

Arguments

x data
lim clip range, length of 1 or more. If length(lim) is 1, then the clip is symmetric

do_if	<i>Clauses With Side Effects (Plotting Etc) (questioning)</i>
-------	---

Description

Clauses With Side Effects (Plotting Etc)
(questioning)

Usage

```
do_if(boolean_expression, if_clause, else_clause = NULL)
```

Arguments

boolean_expression	expression that returns true or false
if_clause	if true, do if_clause
else_clause	if false, do else_clause

do_poly	<i>Polygon plot</i>
---------	---------------------

Description

Polygon plot

Usage

```
do_poly(x, y, col, alpha = 50, border = NA, ...)
```

Arguments

x, y	x and y
col	color
alpha	0-255 transparency
border	border of polygon
...	passed to polygon

ebars*Draw Symmetric Error Bars*

Description

Draw Symmetric Error Bars

Usage

```
ebars(  
  x,  
  y = NULL,  
  sem = NULL,  
  length = 0.05,  
  type = "n",  
  col = "black",  
  pt.col = col,  
  code = 2,  
  ...  
)
```

Arguments

x, y	data to plot
sem	error range (half)
length	line length
type	type of xy data see points
col	default color for points and error areas
pt.col	point colors
code	arrow code
...	other params passed to ebars.y

Examples

```
## Not run:  
plot_clean(0:10, -1:5, xlab = 'X')  
ruta_axis(side = 2, at = -1:8)  
ebars(x = c(2, 4), y = c(0, 3), sem = c(1, 0.5), col = c(2, 3))  
  
## End(Not run)
```

ebar_polygon *Draw Symmetric Error Bars (stable)*

Description

Draw Symmetric Error Bars
(stable)

Usage

```
ebar_polygon(  
  x,  
  y,  
  sem,  
  alpha = 100,  
  col = "black",  
  fill = col,  
  stroke = col,  
  border = NA,  
  add_line = TRUE,  
  lwd = 1,  
  ...  
)
```

Arguments

x, y	plot data
sem	error bar half width
alpha	transparency
col	color
fill	error bar color
stroke	if add lines, line color
border	errorbar border width
add_line	add line(x,y) or not
lwd	line weight
...	passed to lines

Examples

```
## Not run:  
plot_clean(0:10, -1:5, xlab = 'X')  
ruta_axis(side = 2, at = -1:8)  
ebar_polygon(1:10, (1:10)/2, rnorm(10))  
  
## End(Not run)
```

fix_pdf_name	<i>Ensure that the file names ends in ".pdf"</i>
--------------	--

Description

Ensure that the file names ends in ".pdf"

Usage

```
fix_pdf_name(fname)
```

Arguments

fname	potential file name
-------	---------------------

format_stat	<i>helper function to build value labels</i>
-------------	--

Description

(questioning)

Usage

```
format_stat(nm, stats = c("b", "t", "p"))
```

Arguments

nm	statistics
stats	names of statistics

F_NOOP	<i>Apply function to input but returns input itself</i>
--------	---

Description

Execute the function (usually for its side effect) then return (invisibly) the input to the function

Usage

```
F_NOOP(x, FUN, ...)
```

Arguments

x	input
FUN	function to apply on x
...	additional parameters passing to FUN

getAlphaRGB	<i>Get Hex Color With Transparency</i>
-------------	--

Description

Get Hex Color With Transparency

Usage

```
getAlphaRGB(colname, alpha)
```

Arguments

colname	name or number of color
alpha	transparency

Examples

```
## Not run:  
getAlphaRGB('red', 0.5)  
  
## End(Not run)
```

get_data_range	<i>Get Data Range From A Collection Of Named Lists (questioning)</i>
----------------	--

Description

Get Data Range From A Collection Of Named Lists
(questioning)

Usage

```
get_data_range(l1, name = "range", ...)
```

Arguments

l1	list
name	element name
...	additional params for get_list_elements

get_f	<i>Get statistics from linear model</i>
-------	---

Description

(questioning)

Usage

```
get_f(formula, ...)
```

```
format_f(lm.mod, test_name = "All")
```

Arguments

formula, ...	passed to lm
lm.mod	linear model returned by <code>lm()</code>
test_name	name

get_filename	<i>Get the file name from a full file path</i>
--------------	--

Description

Get the file name from a full file path

Usage

```
get_filename(full_path, keep_extension = FALSE)
```

Arguments

full_path	path to file
keep_extension	whether the file extension should be retained (defaults to FALSE)

get_list_elements	<i>Get Elements/Slot/Attributes From List (stable)</i>
-------------------	--

Description

Get Elements/Slot/Attributes From List
(stable)

Usage

```
get_list_elements(  
  ll,  
  name,  
  drop_nulls = TRUE,  
  is_attr = FALSE,  
  use_sapply = TRUE,  
  ...  
)
```

Arguments

ll	list of elements
name	attribute/name/slot to extract
drop_nulls	drop NULL results
is_attr	are we extracting attributes?
use_sapply	try to return a matrix/vector if possible?
...	if is_attr, additional params to attr

get_t	<i>helper function for t-tests that returns the values wanted by format_stat</i>
-------	--

Description

(questioning)

Usage

```
get_t(...)
```

Arguments

...	passed to t.test
-----	----------------------------------

is_within	<i>Check if a is within the range of b (stable)</i>
-----------	---

Description

Check if a is within the range of b
(stable)

Usage

```
is_within(a, b)  
a %within% b
```

Arguments

a	element to check (numeric)
b	vector of numbers

jitr	<i>Return Jittered X (experimental)</i>
------	---

Description

Return Jittered X
(experimental)

Usage

```
jitr(x, len = length(x), r)
```

Arguments

x	data
len	length of x
r	jitter size

m_sd	<i>Function To Return Mean And Standard Deviation (Na Ignored by default) (stable)</i>
------	--

Description

Function To Return Mean And Standard Deviation (Na Ignored by default)
(stable)

Usage

```
m_sd(x, na.rm = TRUE)
```

Arguments

x	data
na.rm	remove NAs?

m_se	<i>Function To Return Mean And Standard Error (stable)</i>
------	--

Description

Function To Return Mean And Standard Error
(stable)

Usage

```
m_se(x)  
  
mat_m_se(m, DIM = 2)
```

Arguments

x	data
m	matrix data
DIM	margin, 1 for row, 2 for column. See apply

NOOP	<i>Apply expression but returns something else</i>
------	--

Description

Evaluate an expression, but then return the input

Usage

```
NOOP(x, expr = NULL)
```

Arguments

x	object to return
expr	expression to run

not_NA	<i>Return True If Not Na (stable)</i>
--------	---------------------------------------

Description

Return True If Not Na

(stable)

make it easier to say not is.na in a pipe'd context

Usage

```
not_NA(x)
```

```
not_NA(x)
```

Arguments

x	data
---	------

not_null	<i>Return True If Not Null (stable)</i>
----------	---

Description

Return True If Not Null
(stable)

Usage

```
not_null(x)
```

Arguments

x	data
---	------

plot_clean	<i>Create A Blank Plot With Given X And Y Range (stable)</i>
------------	--

Description

Create A Blank Plot With Given X And Y Range
(stable)

Usage

```
plot_clean(  
  xlim,  
  ylim,  
  x = 1,  
  y = 1,  
  type = "n",  
  xlab = "",  
  ylab = "",  
  cex.main = rave_cex.main,  
  cex.axis = rave_cex.axis,  
  cex.lab = rave_cex.lab,  
  ...  
)
```

Arguments

xlim	numeric vector
ylim	numeric vector
x	x
y	y
type	default is 'n', i.e. plot nothing. See plot.default
xlab	x label
ylab	y label
cex.main	title font size
cex.axis	axis ticks font size
cex.lab	axis label font size
...	other params passed to plot

Examples

```
## Not run:
# create a blank plot with x from 0 to 10 and y from 1 to 5
plot_clean(0:10, 1:5, xlab = 'X')

## End(Not run)
```

plot_msg

Show A Blank Plot With Messages (maturing)

Description

Show A Blank Plot With Messages
(maturing)

Usage

```
plot_msg(main = "No Conditions Specified")
```

Arguments

main	the title/msg to show
------	-----------------------

Examples

```
## Not run:
plot_msg("Let's Say Something")

## End(Not run)
```

plus_minus	<i>Easy Way To Get +/- From A Long Vector</i>
------------	---

Description

Easy Way To Get +/- From A Long Vector

Usage

```
plus_minus(x, d)
```

Arguments

x	data
d	plus minus value(s)

pm	<i>Easy Way To Get +/- From A Long Vector (deprecated)</i>
----	--

Description

Easy Way To Get +/- From A Long Vector
(deprecated)

Usage

```
pm(x, d)
```

Arguments

x	data
d	plus minus value(s)

print_summary *Print summary and return original input*

Description

output of a function, but return its input to allow chaining

Usage

```
print_summary(x, FUN = summary, ...)
```

Arguments

x	object to print summary
FUN	function to print on
...	additional parameters passing to FUN

pscl *Enforce Sum To 1, Ignoring Na In The Sum, But Keeping Them In The Output (questioning)*

Description

Enforce Sum To 1, Ignoring Na In The Sum, But Keeping Them In The Output
(questioning)

Usage

```
pscl(x)
```

Arguments

x	data
---	------

rave_barplot	<i>Barplot Function That Uses All The Rave Sizes And Colors (stable)</i>
--------------	--

Description

Barplot Function That Uses All The Rave Sizes And Colors
(stable)

Usage

```
rave_barplot(  
  height,  
  cex.axis = rave_cex.axis,  
  cex.lab = rave_cex.lab,  
  cex.names = rave_cex.lab,  
  ...  
)
```

Arguments

height, cex.axis, cex.lab, cex.names, ...
passed to [barplot](#) but the default values are changed

rbind_list	<i>Make rbind magrittr compatible (stable)</i>
------------	--

Description

Make rbind magrittr compatible (stable)

Usage

```
rbind_list(l1)
```

Arguments

l1 the list to bind, each element will be a row

remove_tail	<i>Remove the last k elements from a vector (list) Returns x (with a warning) if k < 1</i>
-------------	---

Description

Remove the last k elements from a vector (list) Returns x (with a warning) if k < 1

Usage

```
remove_tail(x, k = 1)
```

Arguments

x	the vector
k	the number of items to remove

round_range	<i>Get A Integer Interval That Contains X (maturing)</i>
-------------	--

Description

Get A Integer Interval That Contains X
(maturing)

Usage

```
round_range(x)
```

Arguments

x	vector/matrix, numeric
---	------------------------

Examples

```
## Not run:
# 0 - 11
round_range(0.5:10.5)

## End(Not run)
```

row_apply_ii	<i>Apply function along the first dimension</i>
--------------	---

Description

row applier with an additional index variable, ii

Usage

```
row_apply_ii(mat, FUN_, ...)
```

Arguments

mat	matrix or array
FUN_	function to apply to each row
...	additional parameters passing to FUN_

row_scale	<i>helper to do row scaling</i>
-----------	---------------------------------

Description

helper to do row scaling

Usage

```
row_scale(mat)
```

Arguments

mat	a matrix
-----	----------

`ruta_axis`*A Neat Way To Show Axis (stable)*

Description

A Neat Way To Show Axis

(stable)

Usage

```
ruta_axis(  
  side,  
  at,  
  tcl = -0.3,  
  labels = at,  
  las = 1,  
  cex.axis = rave_cex.axis,  
  cex.lab = rave_cex.lab,  
  mgpy = c(3, 0.6, 0),  
  mgpx = c(3, 0.75, 0),  
  ...  
)
```

Arguments

<code>side</code>	1 to 4: bottom, left, up, right. See axis
<code>at</code> , <code>tcl</code> , <code>labels</code> , <code>las</code> , <code>mgpy</code> , <code>mgpx</code> , ...	passed to axis
<code>cex.axis</code>	tick size
<code>cex.lab</code>	label size

Examples

```
## Not run:  
# create a blank plot with x from 0 to 10 and y from 1 to 5  
plot_clean(0:10, 1:5, xlab = 'X')  
ruta_axis(side = 1, at = 1:8)  
  
## End(Not run)
```

sapply_ii	<i>Apply each elements with index as inputs</i>
-----------	---

Description

sapply with an additional index variable, ii

Usage

```
sapply_ii(X, FUN_, simplify = TRUE, USE.NAMES = TRUE, ...)
```

Arguments

X	vector or list
FUN_	function to apply on X
simplify, USE.NAMES, ...	passed to sapply

scale_01	<i>0-1 Scale The Data So We Can Manage The Plot Ranges Easily (stable)</i>
----------	--

Description

0-1 Scale The Data So We Can Manage The Plot Ranges Easily
(stable)

Usage

```
scale_01(x)
```

Arguments

x	data to be rescaled
---	---------------------

stretch	<i>Useful For Plotting When You Want To Go A Bit Beyond The Data (experimental)</i>
---------	---

Description

Useful For Plotting When You Want To Go A Bit Beyond The Data
(experimental)

Usage

```
stretch(x, pct)
```

Arguments

x	data
pct	stretch percentage

str_collapse	<i>Convert vector into comma-separated string</i>
--------------	---

Description

Convert vector into comma-separated string

Usage

```
str_collapse(x, by = ", ", ...)
```

Arguments

x	the vector to collapse
by	the separating token (default is ',')
...	further arguments for paste0

Value

a character vector as produced by paste0

to_pdf	<i>Function for repeatedly writing plots to PDFs</i>
--------	--

Description

Function for repeatedly writing plots to PDFs

Usage

```
to_pdf(PLOT, w, h, mar = rep(1, 4))
```

Arguments

PLOT	a function that produces a plot
w	the requested width of the PDF
h	the requested height of the PDF
mar	the margins of the PDF, set by a call to <code>par(mar=mar)</code> . Defaults to <code>c(1,1,1,1)</code>

Value

A function that takes optional arguments to the PLOT function and `fname`, the name of the PDF. One-off changes to `w`, `h`, and `mar`, are specified with `width`, `height`, and `margin`, respectively

trim	<i>Trim Data By Standard Error (stable)</i>
------	---

Description

Trim Data By Standard Error
(stable)

Usage

```
trim(x, cutoff = 6)
```

Arguments

x	data to be trimmed
cutoff	default is 6, then x is clipped ± 6 times sd

trimmed.mean	<i>Mean Of Data After Trimmed (questioning)</i>
--------------	---

Description

Mean Of Data After Trimmed
(questioning)

Usage

```
trimmed.mean(x, cutoff = 4)
```

Arguments

x, cutoff passed to [trim](#)

trimmed.mse	<i>Sd Of Data After Trimmed (questioning)</i>
-------------	---

Description

Sd Of Data After Trimmed
(questioning)

Usage

```
trimmed.mse(x, cutoff = 4)
```

Arguments

x, cutoff passed to [trim](#)

which.equal	<i>like which.min, but for equality useful when an expression for x or y is long</i>
-------------	--

Description

like which.min, but for equality useful when an expression for x or y is long

Usage

```
which.equal(x, y)
```

Arguments

x, y vectors to compare

%%%

Pipe Function To Paste Two Characters

Description

Pipe Function To Paste Two Characters

Usage

x %%% y

Arguments

x	character
y	character

Value

paste0(x,y)

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