

Package ‘tidygate’

May 3, 2021

Type Package

Title Add Gate Information to Your Tibble

Version 0.4.7

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Description It interactively or programmatically label points within custom gates on two dimensions <<https://github.com/stemangiola/tidygate>>.

The information is added to your tibble. It is based on the package 'gatepoints' from Wajid Jawaid (who is also author of this package). The code of 'gatepoints' was nto integrated in 'tidygate'.

The benefits are (i) in interactive mode you can draw your gates on extensive 'ggplot'-like scatter plots;

(ii) you can draw multiple gates; and (iii) you can save your gates and apply the programmatically.

License GPL-3

Depends R (>= 3.6.0)

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

Imports utils,
graphics,
lifecycle,
scales,
magrittr,
tibble,
dplyr,
purrr,
rlang,
tidyr,
viridis,
grDevices,
RColorBrewer,
stringr

RdMacros lifecycle

Suggests testthat,
markdown,
knitr

VignetteBuilder knitr

Biarch true

biocViews AssayDomain, Infrastructure

URL <https://github.com/stemangiola/tidygate>

BugReports <https://github.com/stemangiola/tidygate/issues>

R topics documented:

fhs	2
gate_chr	3
gate_chr.numeric	5
gate_int.numeric	6
Index	7

fhs	<i>Freehand select</i>
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Description

Freehand select

Usage

```
fhs(data, mark = TRUE, names = TRUE, ...)
```

Arguments

data	Data frame or matrix of co-ordinates. (x,y) co-ordinates for each point will be on rows. Rownames of selected points will be returned.
mark	Default TRUE. Predicate marking of selected points.
names	Default TRUE. If TRUE will return rownames of data frame with points within polygon. If FALSE will return logical vector.
...	Additional parameters passed to points .

Details

Freehand select function. First generate a 2D plot using R's plot function, then select gate region by left clicking. Close polygon by right clicking. The function will return the rownames of the enclosed points by the rownames of th co-ordinates given in `data`.

Value

Returns character vector of rownames of the selected points from `data` if `names` parameter is TRUE. If `names` is FALSE then a logical vector indicating whether points are in the polygon is returned.

Author(s)

Wajid Jawaid

Examples

```
## Not run:
x <- cbind(1:10, 1:10)
rownames(x) <- 1:10
plot(x, pch = 16, col = "red")
fhs(x)

## End(Not run)
```

gate_chr

Label points within a scatter plot drawing a gate

Description

gate() takes as input a 'tbl' formatted as | <DIMENSION 1> | <DIMENSION 2> | <...> | and calculates the rotated dimensional space of the feature value.

Usage

```
gate_chr(
  .dim1,
  .dim2,
  .color = NULL,
  .shape = NULL,
  .size = NULL,
  opacity = 1,
  how_many_gates = 1,
  .group_by = NULL,
  gate_list = NULL,
  ...
)
```

```
gate_int(
  .dim1,
  .dim2,
  .color = NULL,
  .shape = NULL,
  .size = NULL,
  opacity = 1,
  how_many_gates = 1,
  .group_by = NULL,
  gate_list = NULL,
  ...
)
```

Arguments

.dim1	A column symbol. The x dimension
.dim2	A column symbol. The y dimension
.color	A column symbol. Colour of points

<code>.shape</code>	A column symbol. Shape of points
<code>.size</code>	A column symbol. Size of points
<code>opacity</code>	A number between 0 and 1. The opacity level of the data points
<code>how_many_gates</code>	An integer. The number of gates to label
<code>.group_by</code>	A column symbol. The column that is used to calculate distance (i.e., normally genes)
<code>gate_list</code>	A list of gates. It is returned by gate function as attribute <code>"gate"</code> . If you want to create this list yourself, each element of the list is a data frame with x and y columns. Each row is a coordinate. The order matter.
<code>...</code>	Further parameters passed to the function <code>gatepoints::fhs</code>

Details

[Maturing]

This function allow the user to label data points in inside one or more 2D gates. This package is based on on the package `gatepoints`.

Value

An character vector, with "0" for elements outside gates and "1..N" for the elements inside the N gates.

An integer vector, with 0 for elements outside gates and 1..N for the elements inside the N gates.

Examples

```
# Standard use - interactive

if(interactive()){

  tidygate::tidygate_data %>%
  distinct(`ct 1`, `ct 2`, Dim1, Dim2) %>%
  mutate(gate = gate_chr( Dim1, Dim2))

}

library(magrittr)
library(dplyr)

# Standard use - programmatic
res_distinct =
  tidygate::tidygate_data %>%
  distinct(`ct 1`, `ct 2`, Dim1, Dim2) %>%
  mutate(gate = gate_chr( Dim1, Dim2, gate_list = tidygate::gate_list))

# Grouping - programmatic
res =
  tidygate::tidygate_data %>%
  mutate(gate = gate_chr(
```

```

    Dim1, Dim2,
    .group_by = c(`ct 1`, `ct 2`),
    gate_list = tidygate::gate_list
  ))

```

gate_chr.numeric *gate_chr*

Description

gate_chr

Usage

```

## S3 method for class 'numeric'
gate_chr(
  .dim1,
  .dim2,
  .color = NULL,
  .shape = NULL,
  .size = NULL,
  opacity = 1,
  how_many_gates = 1,
  .group_by = NULL,
  gate_list = NULL,
  ...
)

```

Arguments

<code>.dim1</code>	A column symbol. The x dimension
<code>.dim2</code>	A column symbol. The y dimension
<code>.color</code>	A column symbol. Colour of points
<code>.shape</code>	A column symbol. Shape of points
<code>.size</code>	A column symbol. Size of points
<code>opacity</code>	A number between 0 and 1. The opacity level of the data points
<code>how_many_gates</code>	An integer. The number of gates to label
<code>.group_by</code>	A column symbol. The column that is used to calculate distance (i.e., normally genes)
<code>gate_list</code>	A list of gates. It is returned by gate function as attribute <code>"gate"</code> . If you want to create this list yourself, each element of the list is a data frame with x and y columns. Each row is a coordinate. The order matter.
<code>...</code>	Further parameters passed to the function <code>gatepoints::fhs</code>

Value

An character vector, with "0" for elements outside gates and "1..N" for the elements inside the N gates.

```
gate_int.numeric  gate_int
```

Description

gate_int

Usage

```
## S3 method for class 'numeric'
gate_int(
  .dim1,
  .dim2,
  .color = NULL,
  .shape = NULL,
  .size = NULL,
  opacity = 1,
  how_many_gates = 1,
  .group_by = NULL,
  gate_list = NULL,
  ...
)
```

Arguments

.dim1	A column symbol. The x dimension
.dim2	A column symbol. The y dimension
.color	A column symbol. Colour of points
.shape	A column symbol. Shape of points
.size	A column symbol. Size of points
opacity	A number between 0 and 1. The opacity level of the data points
how_many_gates	An integer. The number of gates to label
.group_by	A column symbol. The column that is used to calculate distance (i.e., normally genes)
gate_list	A list of gates. It is returned by gate function as attribute "gate". If you want to create this list yourself, each element of the list is a data frame with x and y columns. Each row is a coordinate. The order matter.
...	Further parameters passed to the function <code>gatepoints::fhs</code>

Value

An integer vector, with 0 for elements outside gates and 1..N for the elements inside the N gates.

Index

`fhs`, 2

`gate_chr`, 3

`gate_chr.numeric`, 5

`gate_int` (*gate_chr*), 3

`gate_int.numeric`, 6

`points`, 2