

Package ‘ggdiceplot’

December 8, 2025

Title Dice Plot Visualization for 'ggplot2'

Version 1.0.1

Maintainer Matthias Flotho <matthias.flotho@ccb.uni-saarland.de>

Description Provides 'ggplot2' extensions for creating dice-based visualizations where each dot position represents a specific categorical variable. The package includes `geom_dice()` for displaying presence/absence of categorical variables using traditional dice patterns. Each dice position (1-6) represents a different category, with dots shown only when that category is present. This allows intuitive visualization of up to 6 categorical variables simultaneously.

License MIT + file LICENSE

Encoding UTF-8

RoxygenNote 7.3.3

URL <https://github.com/maflot/ggdiceplot>

BugReports <https://github.com/maflot/ggdiceplot/issues>

Imports ggplot2 (>= 3.4.0), grid, dplyr, legendry, scales

LazyData true

Depends R (>= 4.1.0)

NeedsCompilation no

Author Matthias Flotho [aut, cre] (ORCID:
<<https://orcid.org/0009-0006-4374-0801>>)

Repository CRAN

Date/Publication 2025-12-08 15:40:06 UTC

Contents

GeomDice	2
make_offsets	3
sample_dice_data1	4
sample_dice_data2	4
sample_dice_large	5

sample_dice_miRNA	5
scale_dots_discrete	6
theme_dice	6

Index	7
--------------	----------

GeomDice	<i>A ggplot2 layer for creating dice representations</i>
----------	--

Description

geom_dice() creates a layer that displays dice-like symbols where each dot represents a specific category. Dots are only shown when that categorical variable is present in the data, allowing compact visual encoding.

Usage

```
geom_dice(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ndots = NULL,  
  x_length = NULL,  
  y_length = NULL,  
  na.rm = FALSE,  
  show.legend = TRUE,  
  inherit.aes = TRUE,  
  ...  
)
```

Arguments

mapping	Set of aesthetic mappings created by aes(). Must include: • x, y: Position of the dice. • dots: The categories present (usually as a string or factor).
data	A data frame. If NULL, inherits from the plot.
stat	The statistical transformation to use.
position	Position adjustment.
ndots	Integer (1–6): number of positions shown per dice.
x_length	x_length Numeric: used for aspect ratio.
y_length	y_length Numeric: used for aspect ratio.
na.rm	Remove missing values if TRUE.
show.legend	Whether to include in legend.
inherit.aes	If FALSE, overrides the default aesthetics.
...	Additional arguments passed to layer().

Value

A ggplot2 layer that draws dice with categorical dot encodings.

Examples

```
library(ggplot2)

df <- data.frame(
  x = 1:3,
  y = 1,
  dots = c("A,B", "A,C,E", "F")
)

ggplot(df, aes(x, y, dots = dots)) +
  geom_dice(ndots = 6, x_length = 3, y_length = 1)
```

make_offsets

Calculate Dice Dot Offsets

Description

Computes the (x, y) offset positions for drawing dots on dice faces.

Usage

```
make_offsets(n, width = 0.5, height = 0.5, pad = 0.1)
```

Arguments

n	Integer from 1 to 6, indicating the number of dots on the die face.
width	Total width of the die face (default: 0.5).
height	Total height of the die face (default: 0.5).
pad	Padding to apply around the dot grid (default: 0.1).

Value

A data.frame with key, x, and y columns indicating dot positions.

sample_dice_data1	<i>Example dice dataset 1</i>
-------------------	-------------------------------

Description

Small toy dataset shipped with **ggdiceplot** and used in basic examples of `geom_dice()`.

Usage

```
data(sample_dice_data1)
```

Format

A data frame with 5 columns:

taxon Taxonomic unit (e.g. genus or species).

disease Disease / condition group (factor).

specimen Sample / specimen identifier.

lfc Numeric effect size (log2 fold change).

q Numeric q-value / FDR associated with the effect.

sample_dice_data2	<i>Example dice dataset 2</i>
-------------------	-------------------------------

Description

A second toy dataset for `geom_dice()` examples.

Usage

```
data(sample_dice_data2)
```

Format

A data frame; similar structure to `sample_dice_data1`.

sample_dice_large	<i>Larger example dice dataset</i>
-------------------	------------------------------------

Description

Larger illustrative dataset for more complex dice-plots.

Usage

```
data(sample_dice_large)
```

Format

A data frame; similar structure to sample_dice_data1.

sample_dice_miRNA	<i>Example miRNA dice dataset</i>
-------------------	-----------------------------------

Description

Example miRNA $\times$ compound $\times$ organ dataset used in the vignette / examples.

Usage

```
data(sample_dice_miRNA)
```

Format

A data frame with at least:

miRNA miRNA identifier (factor).

Compound compound / treatment (factor).

Organ organ label (factor).

log2FC numeric log2 fold change.

direction factor with levels Down, Unchanged, Up.

scale_dots_discrete	<i>Discrete Scale for Dice Dot Colors</i>
---------------------	---

Description

Creates a ggplot2 discrete scale for dice dot aesthetics.

Usage

```
scale_dots_discrete(..., aesthetics = "dots")
```

Arguments

...	Passed to <code>ggplot2::discrete_scale()</code>
aesthetics	Character string of the target aesthetic (default: "dots")

Value

A ggplot2 scale

theme_dice	<i>Dice Theme for ggplot2</i>
------------	-------------------------------

Description

A minimal ggplot2 theme for dice plots.

Usage

```
theme_dice(x_length, y_length, ...)
```

Arguments

x_length	Width of the plotting area (kept for compatibility)
y_length	Height of the plotting area (kept for compatibility)
...	Additional arguments passed to <code>theme_grey()</code>

Value

A ggplot2 theme

Index

* datasets

- GeomDice, [2](#)
- sample_dice_data1, [4](#)
- sample_dice_data2, [4](#)
- sample_dice_large, [5](#)
- sample_dice_miRNA, [5](#)

geom_dice (GeomDice), [2](#)
GeomDice, [2](#)

make_offsets, [3](#)

sample_dice_data1, [4](#)
sample_dice_data2, [4](#)
sample_dice_large, [5](#)
sample_dice_miRNA, [5](#)
scale_dots_discrete, [6](#)

theme_dice, [6](#)