Package 'ggnormalviolin'

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Title A 'ggplot2' Extension to Make Normal Violin Plots

Version 0.2.1

Description Uses 'ggplot2' to create normally distributed violin plots with specified means and standard deviations. This function can be useful in showing hypothetically normal distributions and confidence intervals.

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URL https://github.com/wjschne/ggnormalviolin, https://wjschne.github.io/ggnormalviolin/

BugReports https://github.com/wjschne/ggnormalviolin/issues

Imports dplyr, ggplot2, grid, magrittr, scales

Suggests knitr, quarto, ragg, rmarkdown, spelling, testthat

VignetteBuilder quarto

Encoding UTF-8

Language en-US

RoxygenNote 7.3.2

NeedsCompilation no

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Repository CRAN

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geom_normalviolin *Creates normal violins with specified means and standard deviations*

Description

Creates normal violins with specified means and standard deviations

Usage

```
geom_normalviolin(
  mapping = NULL,
  data = NULL,
  mu = NULL,
  sigma = NULL,
  nsigma = 4,
  p_tail = 0,
  p_lower_tail = p_tail/2,
  p_upper_tail = p_tail/2,
  tail_fill = "black",
  tail_alpha = 0.4,
  width = 0.6,
  upper_limit = NA,
  lower_limit = NA,
  face_left = TRUE,
  face_right = TRUE,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE,
  ...
)
```

Arguments

mapping	Set of aesthetic mappings created by ggplot2::aes().
data	The data to be displayed in this layer
mu	A vector of means
sigma	A vector of standard deviations
nsigma	The number of standard deviations each violin should extend
p_tail	The 2-tailed proportion that should be highlighted. Can be overridden with p_lower_tail and/or p_upper_tail
p_lower_tail	The proportion of the distribution that should be highlighted in the lower tail. Defaults to half of 'p_tail'.
p_upper_tail	The proportion of the distribution that should be highlighted in the upper tail. Defaults to half of 'p_tail'.
tail_fill	fill color for tails

tail_alpha	alpha value for tails
width	Width of normal violin
upper_limit	upper limit for polygons. Needed in case setting limits in scale_y_continuous or ylim distorts the polygons.
lower_limit	lower limit for polygons. Needed in case setting limits in scale_y_continuous or ylim distorts the polygons.
face_left	Display left half of violins. Defaults to 'TRUE'
face_right	Display right half of violins. Defaults to 'TRUE'
na.rm	If FALSE, the default, missing values are removed with a warning. If TRUE, missing values are silently removed.
show.legend	logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If 'FALSE', overrides the default aesthetics, rather than combining with them.
...	Other arguments passed to 'ggplot2::layer'

Value

A ggplot2 layer that can be added to a plot created with [ggplot()][ggplot2::ggplot()].

Aesthetics

geom_normviolin understands the following aesthetics (required aesthetics are in bold):

- **x**
- **mu** (mean of the normal distribution)
- **sigma** (standard deviation of the normal distribution)
- width (width of violin)
- nsigma (number of standard deviations to which the violins extend)
- p_tail (2-tailed proportion of tails highlighted)
- p_upper_tail (proportion of upper tails highlighted)
- p_lower_tail (proportion of lower tails highlighted)
- face_left (display left half of violin?)
- face_right (display right half of violin?)
- color (of lines)
- fill
- alpha (of fills)
- group
- linetype
- linewidth

Examples

```
library(ggplot2)
d <- data.frame(
  dist = c("A", "B"),
  dist_mean = c(80, 90),
  dist_sd = c(15, 10))

ggplot(data = d, aes(
  x = dist,
  mu = dist_mean,
  sigma = dist_sd,
  fill = dist)) +
  geom_normalviolin() +
  theme(legend.position = "none")
```

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