Package ‘vizdraws’

January 11, 2024

Title Visualize Draws from the Prior and Posterior Distributions
Version 2.0.0
Date 2024-01-10
Description Interactive visualization for Bayesian prior and posterior distributions.
This package facilitates an animated transition between prior and posterior distributions.
Additionally, it splits the distribution into bars based on the provided 'breaks,' displaying
the probability for each region. If no 'breaks' are provided, it defaults to zero.
License GPL-3
Encoding UTF-8
URL https://github.com/ignacio82/vizdraws/
https://vizdraws.martinez.fyi/,
https://github.com/ignacio82/vizdraws
Imports dplyr, htmlwidgets, magrittr, stats, stringr
Suggests glue, knitr, rmarkdown
RoxygenNote 7.2.3
VignetteBuilder knitr
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NeedsCompilation no
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Repository CRAN
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R topics documented:

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This function creates a lollipop chart to visualize probabilities.

**Description**

The function `lollipops` creates a lollipop chart to visualize probabilities.

**Usage**

```r
lollipops(
  data,  # A data frame containing the probabilities to visualize.
  plotBackgroundColor = "white",  # The background color of the plot.
  plotBackgroundOpacity = 0.8,  # The opacity of the plot background.
  title = "Probability of an impact",  # The title of the plot.
  leftArea = "Negative",  # The label for the left area of the plot.
  rightArea = "Positive",  # The label for the right area of the plot.
  mediumText = 18,  # The font size for medium text elements.
  bigText = 28,  # The font size for big text elements.
  width = NULL,  # The width of the widget (optional).
  height = NULL,  # The height of the widget (optional).
  elementId = NULL,  # The element ID of the widget (optional).
  logoPath = NULL,  # The path to the logo image (optional).
  logoSize = 100,  # The size of the logo image (optional).
  logoLocation = c("bottom-left", "top-left", "top-right", "bottom-right"),  # The location of the logo.
  rightAreaText = "A positive impact is not necessarily a large impact.",  # Text for the right area.
  leftAreaText = "A negative impact is not necessarily a large impact."  # Text for the left area.
)
```

**Arguments**

- `data`: A data frame containing the probabilities to visualize.
- `plotBackgroundColor`: The background color of the plot.
- `plotBackgroundOpacity`: The opacity of the plot background.
- `title`: The title of the plot.
- `leftArea`: The label for the left area of the plot.
- `rightArea`: The label for the right area of the plot.
- `mediumText`: The font size for medium text elements.
- `bigText`: The font size for big text elements.
- `width`: The width of the widget (optional).
- `height`: The height of the widget (optional).
- `elementId`: The element ID of the widget (optional).
- `logoPath`: The path to the logo image (optional).
- `logoSize`: The size of the logo image (optional).
- `logoLocation`: The location of the logo.
- `rightAreaText`: Text for the right area.
- `leftAreaText`: Text for the left area.
vizdraws

logoPath  Logo path. Defaults to NULL.
logoSize  Logo size. Defaults to FALSE.
logoLocation  Logo location. c('bottom-right', 'top-left', 'top-right', 'bottom-left').
rightAreaText  The tooltip text for the right area of the plot.
leftAreaText  The tooltip text for the left area of the plot.

Details

The data frame should have three columns: `name`, `value`, and `color`. The `name` column specifies the names of the data points, while the `value` column specifies the corresponding probabilities. The `color` column specifies the color of each lollipop.

Value

A HTML widget object representing the lollipop chart.

Examples

data <- data.frame(
  Name = c("Outcome 1", "Outcome 2", "Outcome 3"),
  Prior = c(0.5, 0.5, 0.5),
  Posterior = c(0.2, 0.6, 0.9)
)
lollipops(data,
  logoPath = 'https://upload.wikimedia.org/wikipedia/commons/b/b8/YouTube_Logo_2017.svg',
  logoLocation = 'bottom-left')

Description

Visualize Draws from Prior or Posterior Distributions

Usage

vizdraws(
  prior = NULL,
  posterior = NULL,
  MME = 0,
  threshold = NULL,
  units = NULL,
  quantity = FALSE,
  tense = c("future", "past"),
  backgroundColor = "#FFFFFF",
  backgroundOpacity = 0.9,
xlab = NULL,
breaks = NULL,
brake_names = NULL,
colors = NULL,
width = NULL,
height = NULL,
xlim = NULL,
font_scale = 1,
display_mode_name = FALSE,
title = "",
stop_trans = FALSE,
percentage = FALSE,
elementId = NULL,
logoPath = NULL,
logoSize = 100,
logoLocation = c("bottom-right", "top-left", "top-right", "bottom-left")

Arguments

prior (optional) Prior distribution or draws from it. Supported distributions: ‘Normal’, ‘uniform’, ‘beta’, and ‘gamma’. Provide either this or the posterior.

posterior (optional) Draws from the posterior distribution. Provide either this or the prior.

MME Minimum meaningful effect. If not provided, MME is set to zero.

threshold If the probability is greater than this threshold, a decision is considered comfortable.

units Optional argument to specify the units of x (e.g., dollars or applications).

quantity Defaults to FALSE. When set to true, the text will reflect predicting a quantity rather than a treatment effect.

tense Either "future" or "past." This is the tense used in the description if quantity is set to TRUE. NULL.

backgroundColor Defaults to '#FFFFFF'.

backgroundOpacity Defaults to 0.9.

xlab Defaults to NULL.

breaks Defaults to NULL.

break_names Defaults to NULL.

colors Colors for the left, middle, and right areas. Defaults to c("#e41a1c", "#377eb8", "#4daf4a").

width Width for shiny.

height Height for shiny.

xlim Defaults to NULL.

font_scale Defaults to 1.
display_mode_name  Defaults to FALSE.
title  Defaults to ''.
stop_trans  Defaults to FALSE. When set to true, the initial transition stops at posterior density.
percentage  Defaults to FALSE. When set to true, the x-axis tick format will be set to percentage.
elementId  Use an explicit element ID for the widget (rather than an automatically generated one). elementID for shiny.
logoPath  Logo path. Defaults to NULL.
logoSize  Logo size. Defaults to FALSE.
logoLocation  Logo location. c('bottom-right', 'top-left', 'top-right', 'bottom-left').

Details
A function to visualize draws from either the prior or posterior distribution, facilitating interpretation and decision-making.

Value
A HTML widget object.

Examples
if(interactive()){
  set.seed(9782)
  library(vizdraws)
  vizdraws(prior = rnorm(100000))
}

vizdraws-shiny  Shiny bindings for vizdraws

Description
Output and render functions for using vizdraws within Shiny applications and interactive Rmd documents.

Usage
vizdrawsOutput(outputId, width = "100\%", height = "100\%")
rendervizdraws(expr, env = parent.frame(), quoted = FALSE)
## Arguments

<table>
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<tr>
<th>Argument</th>
<th>Description</th>
</tr>
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<tr>
<td><code>outputId</code></td>
<td>output variable to read from</td>
</tr>
<tr>
<td><code>width</code>, <code>height</code></td>
<td>Must be a valid CSS unit (like '100%', '400px', 'auto') or a number, which will be coerced to a string and have 'px' appended.</td>
</tr>
<tr>
<td><code>expr</code></td>
<td>An expression that generates a vizdraws</td>
</tr>
<tr>
<td><code>env</code></td>
<td>The environment in which to evaluate <code>expr</code>.</td>
</tr>
<tr>
<td><code>quoted</code></td>
<td>Is <code>expr</code> a quoted expression (with <code>quote()</code>)? This is useful if you want to save an expression in a variable.</td>
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