Package: tp (via r-universe)

May 28, 2026

Title Tornado plot demo

Version 0.0.0.9000

Description Demonstrates simple construction of tornado plot.

License GPL-3

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

Imports distributions3, ggplot2, methods, rlang, scales, stats, tibble

Repository https://timtaylor.r-universe.dev

Date/Publication 2025-07-08 09:34:55 UTC

RemoteUrl https://github.com/TimTaylor/tp

RemoteRef HEAD

RemoteSha aba9340378029b4d368716891f54769e8099473a

Contents

`tornado` *Tornado sampling and plotting function*

Description

A small wrapper around lapply that loops over a functions parameters, sampling one whilst fixing the others. `tornado_sample()` just wraps a simple univariate sensitivity analysis, ensuring the output is formatted in a usable way for the namesake plot function.

Usage

```
tornado_sample(
  n,
  fun,
  distributions,
  ...,
  baseline = NULL,
  output_name = ".result"
)

tornado_plot(x, ..., type = c("jitter", "maxmin"), nbreaks = 6, xlab = "value")
```

Arguments

n	Number of samples.
fun	A vectorised function.
distributions	Distributions created with the distributions3 package that correspond to the named parameters of fun.
...	Not currently used.
baseline	NULL or a scalar numeric value. If not NULL then this value is used as the comparitor when producing the latter tornado plots.
output_name	The name to use of the result column in the output tibbles. This must not correspond to any of the parameter names of fun.
x	Output from tornado_sample().
type	Character string. Either 'jitter' or 'maxmin'. If 'jitter' then we simply plot the sample results against the corresponding distribution that varies. Otherwise, we plot the corresponding maximum and minimum values as a split bar chart.
nbreaks	Passed to scales::breaks_extended().
xlab	The label for the x-axis.

Value

For tornado_sample() a tibble with class **tornado_samples** and an additional attribute that gives the baseline value calculated when setting each argument to it's distributions mean value (or an optional, user-supplied, value). For tornado_plot(), a ggplot2 object

Examples

```
# User inputs ------------------------------------------------------------

# Function with desired arguments
# NOTE: MUST be vectorised by the user and return a scalar value
fun <- function(cost_per_day, days, discount) cost_per_day * days * discount

# A distribution (from distributions3) for each function argument
distributions <- list(
    cost_per_day = distributions3::Gamma(shape = 9, rate = 0.5),
```

```
    days         = distributions3::Gamma(shape = 5, rate = 1),
    discount     = distributions3::Beta(alpha = 2, beta = 40)
)

# Number of samples to take for each argument
samples <- 1000

# Package functionality ------------------------------------------------

# generate the samples for each parameter
dat <- tornado_sample(samples, fun, distributions)

# jitter plot
tornado_plot(dat)

# plot of the extremes (akin to the more traditional plots)
tornado_plot(dat, type = "maxmin")
```

Index