Package ‘reval’

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Title  Argument Table Generation for Sensitivity Analysis
Version  3.0-0
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Description  Simplified scenario testing and sensitivity analysis, redesigned to use packages 'future' and 'furrr'. Provides functions for generating function argument sets using one-factor-at-a-time (OFAT) and (sampled) permutations.
Encoding  UTF-8
URL  https://github.com/mkoohafkan/reval
BugReports  https://github.com/mkoohafkan/reval/issues
License  GPL (>= 3)
Depends  R (>= 4.1)
Imports  future (>= 1.21), furrr (>= 0.2), purrr (>= 0.3), dplyr (>= 1.0), rlang (>= 0.4)
Suggests  knitr (>= 1.33), rmarkdown (>= 2.8), ggplot2 (>= 3.3), tidyr (>= 1.1), rivr (>= 1.2)
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Description

This package provides functions to generate argument tables for scenario testing and sensitivity analysis with R.

args_ofat

One Factor At a Time Argument Set

Description

Generate an argument table based on OFAT.

Usage

args_ofat(...)

Arguments

... Named arguments to a function.

Value

A tibble of argument combinations.

Examples

args_ofat(x = 1:5, y = 1:3)
args_ofat(x = 1:3, y = 1:3, z = 1:3)
**args_permute**  

**Permutation Argument Set**

**Description**
Generate an argument table based on permutations.

**Usage**
```r
args_permute(..., .n)
```

**Arguments**
- `...` Named arguments to a function.
- `.n` the number of argument permutations to evaluate (sampling without replacement). If missing, all possible permutations are returned.

**Value**
A tibble of argument combinations.

**Examples**
```r
args_permute(x = 1:5, y = 1:2)
args_permute(x = 1:10, y = 1:10, z = 1:10, .n = 10)
```

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**args_set**  

**Argument Set**

**Description**
Generate an argument table from a set of arguments, following the standard rules for vector recycling in R.

**Usage**
```r
args_set(...)```

**Arguments**
- `...` Named arguments to a function.

**Value**
A tibble of argument combinations.
Examples

args_set(x = 1:10, y = 1:10)
args_set(x = 1:10, y = 1:5, z = 1:2)
# mismatched argument lengths will generate a warning
## Not run:
args_set(x = 1:10, y = 1:3)
## End(Not run)

Description

Evaluate a function repeatedly across argument sets or permutations. This function is included for backwards compatibility with prior versions of ‘package:reval’ and will be defunct in future releases.

Usage

evalmany(
  fun,
  ..., 
  method = c("ofat", "permute", "set"),
  sample = 0L,
  default.args = list(),
  collate = TRUE,
  collate.id = c("single", "multi"),
  collate.prepend = "",
  collate.fun = identity,
  clusters = 1L,
  packages = NULL
)

Arguments

fun  The function to be evaluated.
...
Arguments to be varied when evaluating fun, where each argument in ‘...’ is a (named) vector or list of values. Lists of multi-value objects (e.g. data.frames) should be named explicitly and may otherwise produce unexpected or incorrect names.

method The sensitivity analysis method to be used. Can be either one-factor-at-a-time ("ofat") evaluation, evaluation of parameter sets ("set"), or (sampled) permutations of parameter sets ("permute"). When method = "ofat", the first element of each argument in ‘...’ is assumed to be the "default" value of that argument.
sample
If method = "permute", the number of parameter permutations to evaluate (sampling without replacement). If sample < 1 (the default) then all possible permutations are evaluated.

default.args
Named list of additional arguments passed to fun.
collate
Whether to collate the results or not. If TRUE, output elements will be coerced into data.frames using as.data.frame. Otherwise, the raw outputs will be returned as a named list.
collate.id
If collate = TRUE, the method used to store the evaluation identifiers. If collate.id = "single", a single column named 'id' is used. If collate.id = "multi", one column is created for each argument in '...', e.g. 'arg1', 'arg2', etc.
collate.prepend
A character string prepended to the identifier column. If collate.id = "single", the identifier column will be named <collate.prepend>id. If collate.id = "multi", identifier columns will be named as <collate.prepend><arg> where arg is an element of '...'.
collate.fun
If collate = TRUE, an optional function for reshaping the output of each evaluation prior to coercing and collating the outputs.
clusters
Number of clusters to use for parallel (multisession) processing. Default is 1 (serial computation).
packages
Not used, included for backwards compatibility.

Value
If collate = TRUE, a data.frame. Otherwise, a named list.
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