Package 'reval'

June 27, 2021

Title Argument Table Generation for Sensitivity Analysis

Version 3.0-0

Author Michael C Koohafkan [aut, cre]

Maintainer Michael C Koohafkan <michael.koohafkan@gmail.com>

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)

VignetteBuilder knitr

RoxygenNote 7.1.1

NeedsCompilation no

Repository CRAN

Date/Publication 2021-06-27 04:40:02 UTC

R topics documented:

reval-package *Repeated Function Evaluation For Sensitivity Analysis*

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

```
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

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

args_set *Argument Set*

Description

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

Usage

```
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)
```

`evalmany` *Repeated evaluations (Backwards Compatibility)*

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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