Package 'mrgsim.parallel'

July 6, 2020

Type Package

Title Simulate with 'mrgsolve' in Parallel

Version 0.1.1

Author Kyle Baron

Maintainer Kyle Baron <kylebtwin@imap.cc>

Description Simulation from an 'mrgsolve'
<https://cran.r-project.org/package=mrgsolve> model using a parallel backend.
Input data sets are split (chunked) and simulated in parallel using
mclapply() or future_lapply()
<https://cran.r-project.org/package=future.apply>.

License GPL (>= 2)

Imports parallel, dplyr, future.apply

Depends mrgsolve, R (>= 3.5.0)

Suggests testthat

Encoding UTF-8

LazyData true

URL https://github.com/kylebaron/mrgsim.parallel

BugReports https://github.com/kylebaron/mrgsim.parallel/issues

RoxygenNote 7.1.1

Language en-US

NeedsCompilation no

Repository CRAN

Date/Publication 2020-07-06 15:30:02 UTC

R topics documented:

`chunk_data_frame` *Chunk a data frame*

Description

Use chunk_by_id to split up a data set by the `ID` column; use chunk_by_row split a data set by rows.

Usage

```
chunk_by_id(data, nchunk, id_col = "ID", mark = NULL)

chunk_by_row(data, nchunk, mark = NULL)
```

Arguments

`data`	a data frame
`nchunk`	number of chunks
`id_col`	character specifying the column containing the `ID` for chunking
`mark`	when populated as a character label, adds a column to the chunked data frames with that name and with value the integer group number

Value

A list of data frames

Examples

```
x <- expand.grid(ID = 1:10, B = rev(1:10))

chunk_by_id(x, 3)

chunk_by_row(x, nchunk = 4)
```

`mrgsim.parallel` *Simulate with 'mrgsolve' in Parallel*

Description

Simulate with 'mrgsolve' in Parallel

Resources

- GitHub: https://github.com/kylebaron/mrgsim.parallel
- Docs: https://kylebaron.github.io/mrgsim.parallel

Package options

- `mrgsim.parallel.mc.able`: if `TRUE`, multicore will be used if appropriate.

`parallel_mrgsim_d` *Simulate a data set in parallel*

Description

Use future_mrgsim_d to simulate with the `future` package. Use mc_mrgsim_d to simulate with `parallel::mclapply`.

Usage

```
future_mrgsim_d(
  mod,
  data,
  nchunk = 4,
  ...,
  .as_list = FALSE,
  .p = NULL,
  .dry = FALSE,
  .seed = TRUE,
  .parallel = TRUE
)

mc_mrgsim_d(
  mod,
  data,
  nchunk = 4,
  ...,
  .as_list = FALSE,
  .p = NULL,
  .dry = FALSE,
  .seed = NULL,
  .parallel = TRUE
)

fu_mrgsim_d(
  mod,
  data,
  nchunk = 4,
  ...,
  .as_list = FALSE,
  .p = NULL,
  .dry = FALSE,
  .seed = TRUE,
```

```
  .parallel = TRUE
)

fu_mrgsim_d0(..., .dry = TRUE)
```

Arguments

mod	mrgsolve model object see mrgsolve::mrgmod
data	data set to simulate; see mrgsolve::data_set
nchunk	number of chunks in which to split the data set
...	passed to mrgsim_d
.as_list	if TRUE a list is return; otherwise (default) a data frame
.p	post processing function executed on the worker; arguments should be (1) the simulated output (2) the model object
.dry	if TRUE neither the simulation nor the post processing will be done
.seed	passed to future_lapply as future.seed
.parallel	if FALSE, the simulation will not be parallelized; this is intended for debugging and testing use only

Value

A data frame or list of simulated data

See Also

future_mrgsim_ei

Examples

```
mod <- mrgsolve::house()

data <- mrgsolve::expand.ev(amt = seq(10))

out <- future_mrgsim_d(mod,data, nchunk = 2)
```

---

parallel_mrgsim_ei *Simulate an idata set in parallel*

Description

Use future_mrgsim_ei to simulate with the future package. Use mc_mrgsim_ei to simulate with parallel::mclapply.

Usage

```
future_mrgsim_ei(
  mod,
  events,
  idata,
  nchunk = 4,
  ...,
  .as_list = FALSE,
  .p = NULL,
  .dry = FALSE,
  .seed = TRUE,
  .parallel = TRUE
)

fu_mrgsim_ei(
  mod,
  events,
  idata,
  nchunk = 4,
  ...,
  .as_list = FALSE,
  .p = NULL,
  .dry = FALSE,
  .seed = TRUE,
  .parallel = TRUE
)

fu_mrgsim_ei0(..., .dry = TRUE)

mc_mrgsim_ei(
  mod,
  events,
  idata,
  nchunk = 4,
  ...,
  .as_list = FALSE,
  .p = NULL,
  .dry = FALSE,
  .seed = NULL,
  .parallel = TRUE
)
```

Arguments

mod	mrgsolve model object see mrgsolve::mrgmod
events	an event object from mrgsolve; see mrgsolve::ev
idata	an idata set of parameters, one per simulation unit (individual); see mrgsolve::idata_set

nchunk	number of chunks in which to split the data set
...	passed to mrgsim_d
.as_list	if TRUE a list is return; otherwise (default) a data frame
.p	post processing function executed on the worker; arguments should be (1) the simulated output (2) the model object
.dry	if TRUE neither the simulation nor the post processing will be done
.seed	passed to future_lapply as future.seed
.parallel	if FALSE, the simulation will not be parallelized; this is intended for debugging and testing use only

Value

A data frame or list of simulated data

See Also

future_mrgsim_ei

Examples

```
mod <- mrgsolve::house()

events <- mrgsolve::ev(amt = 100)

idata <- data.frame(CL = runif(10, 0.5, 1.5))

out <- future_mrgsim_ei(mod, events, idata)
```

Index