Package ‘tdcmStan’
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Type Package

Title Automating the Creation of Stan Code for TDCMs

Version 2.0.0

Description A collection of functions for automatically creating ‘Stan’
code for transition diagnostic classification models (TDCMs) as they are
This package supports automating the creation of ‘Stan’ code for TDCMs,
fungible TDCMs (i.e., TDCMs with item parameters constrained to be equal
across all items), and multi-threaded TDCMs.

License GPL (>= 2)

Imports dplyr (>= 1.0.7), glue (>= 1.4.2), magrittr (>= 2.0.1),
parallel (>= 4.1.0), rlang (>= 0.4.11), stringr (>= 1.4.0),
tibble (>= 3.1.5), tidyr (>= 1.1.4), tidyselect (>= 1.1.2)

Suggests readr (>= 2.0.0), testthat (>= 3.0.4)

Depends R (>= 3.5.0)

Encoding UTF-8

RoxygenNote 7.1.2

NeedsCompilation no

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bin_profile

Creating a Class by Attribute Matrix

Description

Automating the creation of Class by Attribute Matrix

Usage

bin_profile(natt)

Arguments

natt An integer containing the number of assessed attributes.

Value

‘profiles’ A tibble containing a class by attribute matrix listing which attributes are mastered by each latent class.

Examples

bin_profile(natt = 3)

create_fng_no_common_items_stan_tdcm

Creating Fungible TDCM with No Common Items Stan Code

Description

Automating the creation of fungible Stan code for a TDCM when there are no common items.

Usage

create_fng_no_common_items_stan_tdcm(q_matrix)

Arguments

q_matrix A tibble containing the assessment Q-matrix.

Value

‘stan_code’ A list containing the text for the Stan code blocks.

Examples

qmatrix = tibble::tibble(att_1 = c(1, 0, 1, 0, 1, 1), att_2 = c(0, 1, 0, 1, 1, 1))
create_fng_no_common_items_stan_tdcm(q_matrix = qmatrix)
**create_fng_stan_tdcm**  
*Creating Fungible TDCM Stan Code*

**Description**  
Automating the creation of fungible Stan code for a TDCM.

**Usage**  
create_fng_stan_tdcm(q_matrix)

**Arguments**  
q_matrix  
A tibble containing the assessment Q-matrix.

**Value**  
'stan_code' A list containing the text for the Stan code blocks.

**Examples**  
qmatrix = tibble::tibble(att_1 = c(1, 0, 1, 0, 1, 1), att_2 = c(0, 1, 0, 1, 1, 1))  
create_fng_stan_tdcm(q_matrix = qmatrix)

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**create_stan_tdcm**  
*Creating TDCM Stan Code*

**Description**  
Automating the creation of Stan code for a TDCM.

**Usage**  
create_stan_tdcm(q_matrix)

**Arguments**  
q_matrix  
A tibble containing the assessment Q-matrix.

**Value**  
'stan_code' A list containing the text for the Stan code blocks.

**Examples**  
qmatrix = tibble::tibble(att_1 = c(1, 0, 1, 0, 1, 1), att_2 = c(0, 1, 0, 1, 1, 1))  
create_stan_tdcm(q_matrix = qmatrix)
create_threaded_stan_tdc

Creating Multi-Threaded TDCM Stan Code

Description
Automating the creation of multi-threaded Stan code for a TDCM.

Usage
create_threaded_stan_tdc(q_matrix)

Arguments
q_matrix A tibble containing the assessment Q-matrix.

Value
'stan_code' A list containing the text for the Stan code blocks.

Examples
q_matrix = tibble::tibble(att_1 = c(1, 0, 1, 0, 1, 1), att_2 = c(0, 1, 0, 1, 1, 1))
create_threaded_stan_tdc(q_matrix = q_matrix)

shard_calculator

Calculate the Number of Shards and Simultaneous Chains

Description
Calculating the number of shards and simultaneous chains.

Usage
shard_calculator(num_respondents, num_responses, num_chains)

Arguments
num_respondents An integer specifying the number of respondents.
num_responses An integer specifying the number of responses.
num_chains An integer specifying the number of chains that need to be run.

Value
'ret' A list containing the number of shards to use within each chain and the number of chains to run in parallel.
Examples

shard_calculator(num_respondents = 1000, num_responses = 5000, num_chains = 4)
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