

# Package ‘tdcmStan’

October 14, 2022

**Type** Package

**Title** Automating the Creation of Stan Code for TDCMs

**Version** 1.0.0

**Description** A collection of functions for automatically creating 'Stan' code for transition diagnostic classification models (TDCMs) as they are defined by Madison and Bradshaw (2018) <[DOI:10.1007/s11336-018-9638-5](https://doi.org/10.1007/s11336-018-9638-5)>. 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), rlang (>= 0.4.11), stringr (>= 1.4.0), tibble (>= 3.1.5), tidyr (>= 1.1.4)

**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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**Repository** CRAN

**Date/Publication** 2022-05-09 07:50:02 UTC

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create\_fng\_stan\_tdc *Creating Fungible TDCM Stan Code*

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**Description**

Automating the creation of fungible Stan code for a TDCM.

**Usage**

```
create_fng_stan_tdc(q_matrix, profs)
```

**Arguments**

`q_matrix` A tibble containing the assessment Q-matrix.  
`profs` A tibble of the possible attribute mastery profiles.

**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))  
possible_profiles = tibble::tibble(att_1 = c(0, 1, 0, 1), att_2 = c(0, 1, 0, 1))  
create_fng_stan_tdc(q_matrix = qmatrix, profs = possible_profiles)
```

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create\_stan\_tdc *Creating TDCM Stan Code*

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**Description**

Automating the creation of Stan code for a TDCM.

**Usage**

```
create_stan_tdc(q_matrix, profs)
```

**Arguments**

`q_matrix` A tibble containing the assessment Q-matrix.  
`profs` A tibble of the possible attribute mastery profiles.

**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))
possible_profiles = tibble::tibble(att_1 = c(0, 1, 0, 1), att_2 = c(0, 1, 0, 1))
create_stan_tdc(qmatrix = qmatrix, profs = possible_profiles)
```

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```
create_threaded_stan_tdc
```

*Creating Multi-Threaded TDCM Stan Code*

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**Description**

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

**Usage**

```
create_threaded_stan_tdc(qmatrix, profs)
```

**Arguments**

qmatrix	A tibble containing the assessment Q-matrix.
profs	A tibble of the possible attribute mastery profiles.

**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))
possible_profiles = tibble::tibble(att_1 = c(0, 1, 0, 1), att_2 = c(0, 1, 0, 1))
create_threaded_stan_tdc(qmatrix = qmatrix, profs = possible_profiles)
```

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