Package: smbr2 (via r-universe)

June 3, 2026

Title Facilitates Bayesian Analysis using STAN with CmdStanR

Version 0.0.0.9000

Description Facilitates Bayesian Analysis using STAN with CmdStanR. This builds on smbr, which uses rstan.

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URL https://github.com/poissonconsulting/smbr2

BugReports https://github.com/poissonconsulting/smbr2/issues

Depends R (>= 4.1)

Imports broom, chk, cmdstanr, coda, embr (>= 0.1.0), generics, magrittr, mcmcr, nlist, smbr, term, timer, utils

Suggests bauw, BH, covr, ggplot2, mcmcdata, RcppEigen, readr, testthat, universals

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Contents

`diagnose` *Diagnose Analysis Objects*

Description

Generic function for diagnosing analysis objects.

See documentation for specific methods:

- `diagnose.cmdstan_mcmc_analysis()`

Usage

```
diagnose(x, ...)
```

Arguments

`x`	An analysis object.
`...`	Additional arguments passed to methods.

Value

Diagnostic output (format depends on the analysis type).

`diagnose.cmdstan_mcmc_analysis` *Diagnose CmdStan MCMC Analysis*

Description

Provides diagnostic information for CmdStan MCMC analysis objects.

For more details on diagnostics and how to address issues see:

- https://mc-stan.org/docs/cmdstan-guide/diagnose.html

Usage

```
## S3 method for class 'cmdstan_mcmc_analysis'
diagnose(x, ...)
```

Arguments

`x`	A cmdstan_mcmc_analysis object.
`...`	Additional arguments (unused).

Value

Output from CmdStan's diagnostic function.

`diagnose.cmdstan_pathfinder_analysis` *Diagnose CmdStan Pathfinder Analysis*

Description

Provides diagnostic information for CmdStan Pathfinder analysis objects.

For more details on diagnostics and how to address issues see:

- https://mc-stan.org/docs/cmdstan-guide/diagnose.html

Usage

```
## S3 method for class 'cmdstan_pathfinder_analysis'
diagnose(x, ...)
```

Arguments

`x`	A cmdstan_pathfinder_analysis object.
`...`	Additional arguments (unused).

Value

Output from CmdStan's diagnostic function.

`diagnose.cmdstan_variational_analysis`
Diagnose CmdStan Variational Analysis

Description

Provides diagnostic information for CmdStan Variational analysis objects.

For more details on diagnostics and how to address issues see:

- https://mc-stan.org/docs/cmdstan-guide/diagnose.html

Usage

```
## S3 method for class 'cmdstan_variational_analysis'
diagnose(x, ...)
```

Arguments

`x`	A cmdstan_variational_analysis object.
`...`	Additional arguments (unused).

Value

Output from CmdStan's diagnostic function.

`glance.cmdstan_laplace_analysis`
Glance at CmdStanR Laplace Analysis

Description

Provides a one-row summary of Laplace approximation analysis results.

Usage

```
## S3 method for class 'cmdstan_laplace_analysis'
glance(x, ...)
```

Arguments

`x`	A `cmdstan_laplace_analysis` object.
`...`	Additional arguments (unused).

Details

Diagnostic interpretation:

- **return_code**: Should be 0. Non-zero values indicate the optimizer failed to find the posterior mode, invalidating the Laplace approximation.

Value

A tibble with one row containing:

n Number of observations in the dataset

K Number of parameters

converged Logical indicating optimization convergence

return_code Optimization return code for mode finding. **Problem indicators**: Non-zero values indicate mode-finding issues

See Also

`embr::glance()`

---

glance.cmdstan_mcmc_analysis

Glance at CmdStanR MCMC Analysis

Description

Provides a one-row summary of key diagnostics for MCMC analysis results.

Usage

```
## S3 method for class 'cmdstan_mcmc_analysis'
glance(x, ...)
```

Arguments

`x`	A `cmdstan_mcmc_analysis` object.
`...`	Additional arguments (unused).

Details

Diagnostic interpretation:

- **Divergent transitions**: Should be 0. Any divergent transitions indicate the sampler had numerical issues and results may be unreliable.
- **Max treedepth**: Should be 0 or very low. High values suggest the sampler is working hard and may benefit from increased `adapt_delta`.
- **E-BFMI**: Should be > 0.2. Values < 0.2 suggest poor adaptation, often requiring longer warmup or model reparameterization.

Value

A tibble with one row containing:

n Number of observations in the dataset

K Number of parameters

nchains Number of MCMC chains

niters Number of iterations per chain (post-warmup)

nthin Thinning interval

converged Logical indicating convergence (TRUE if max R-hat < rhat threshold)

num_divergent Number of divergent transitions across all chains. **Problem indicators**: Any value > 0 indicates sampling issues

max_treedepth Number of transitions that hit maximum tree depth. **Problem indicators**: Values > 0 may indicate inefficient sampling

ebfmi Minimum Energy Bayesian Fraction of Missing Information across chains. **Problem indicators**: Values < 0.2 indicate poor adaptation/warmup

See Also

`embr::glance()`, `diagnose()`

`glance.cmdstan_optimize_analysis`
Glance at CmdStanR Optimization Analysis

Description

Provides a one-row summary of optimization analysis results.

Usage

```
## S3 method for class 'cmdstan_optimize_analysis'
glance(x, ...)
```

Arguments

`x`	A `cmdstan_optimize_analysis` object.
`...`	Additional arguments (unused).

Details

Diagnostic interpretation:

- **return_code**: Should be 0. Non-zero values indicate the optimizer encountered issues (e.g., 1 = max iterations reached, 2 = convergence issues).

Value

A tibble with one row containing:

n Number of observations in the dataset

K Number of parameters

converged Logical indicating optimization convergence

return_code Optimization return code. **Problem indicators**: Non-zero values indicate optimization issues

See Also

`embr::glance()`

---

glance.cmdstan_pathfinder_analysis

Glance at CmdStanR Pathfinder Analysis

Description

Provides a one-row summary of key diagnostics for Pathfinder analysis results.

Usage

```
## S3 method for class 'cmdstan_pathfinder_analysis'
glance(x, ...)
```

Arguments

`x`	A `cmdstan_pathfinder_analysis` object.
`...`	Additional arguments (unused).

Details

Diagnostic interpretation:

- **return_code**: Should be 0. Non-zero values indicate pathfinder failed to find a good approximation.

Value

A tibble with one row containing:

n Number of observations in the dataset

K Number of parameters

converged Logical indicating pathfinder convergence

return_code Pathfinder return code. **Problem indicators**: Non-zero values indicate pathfinder issues

See Also

embr::glance(), diagnose()

`glance.cmdstan_variational_analysis` *Glance at CmdStanR Variational Analysis*

Description

Provides a one-row summary of variational inference analysis results.

Usage

```
## S3 method for class 'cmdstan_variational_analysis'
glance(x, ...)
```

Arguments

`x`	A `cmdstan_variational_analysis` object.
`...`	Additional arguments (unused).

Details

Diagnostic interpretation:

- **return_code**: Should be 0. Non-zero values indicate the variational algorithm failed to converge to a stable ELBO (Evidence Lower BOund).

Value

A tibble with one row containing:

n Number of observations in the dataset

K Number of parameters

converged Logical indicating ELBO convergence

return_code Optimization return code. **Problem indicators**: Non-zero values indicate convergence issues

See Also

embr::glance(), diagnose()

is.cmdstan_analysis *Is a CmdStan Analysis*

Description

Tests whether x is an object of class 'cmdstan_analysis'

Usage

```
is.cmdstan_analysis(x)
```

Arguments

x	The object to test.

Value

A flag indicating whether the test was positive.

is.cmdstan_mcmc_analysis *Is a CmdStan MCMC Analysis*

Description

Tests whether x is an object of class 'cmdstan_mcmc_analysis'

Usage

```
is.cmdstan_mcmc_analysis(x)
```

Arguments

x	The object to test.

Value

A flag indicating whether the test was positive.

`print.cmdstan_diagnostics` *Print Method for CmdStan MCMC Diagnostics*

Description

Print Method for CmdStan MCMC Diagnostics

Usage

```
## S3 method for class 'cmdstan_diagnostics'
print(x, ...)
```

Arguments

`x`	A cmdstan_mcmc_diagnostics object.
`...`	Additional arguments (currently unused).

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