

Package: adlaplaceExample (via r-universe)

October 8, 2026

Type Package

Title Example Backend for 'adlaplace'

Version 0.6.0

Description Provides a minimal example backend package for 'adlaplace'. It demonstrates how to implement and expose model-specific AD tape construction while delegating optimization and Laplace approximation workflows to 'adlaplace'.

SystemRequirements OpenMP

License GPL (>= 2)

Depends R (>= 4.1.0)

LinkingTo Rcpp, adlaplace, RcppEigen, trustOptim, RCppAD

Imports Rcpp, adlaplace (>= 0.6.0), RCppAD, methods

Suggests trustOptim, abind, knitr, rmarkdown, testthat (>= 3.0.0), sn, Matrix, pracma

VignetteBuilder knitr

Config/testthat/edition 3

Encoding UTF-8

Roxygen list(markdown = TRUE)

NeedsCompilation yes

Collate '000.R' 'RcppExports.R' 'skewnormal.R'

Config/roxygen2/version 8.0.0

RoxygenNote 7.3.3

Repository <https://eborgnine.r-universe.dev>

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get_ad_pack_raw_obs	<i>Build observation-shard ad_pack_ptr in this package’s shared library.</i>
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Description

Records CppAD tapes in adlaplaceExample.so (same DSO as custom densities).

Usage

get_ad_pack_raw_obs(model, config, name)

Arguments

- | | |
|--------|---|
| model | density_data S4 object. |
| config | Model configuration list. |
| name | Observation density name (e.g. "skewnormal_obs"). |

Value

External pointer of class ad_pack_ptr.

get_ad_pack_raw_parameters	<i>Build parameters-shard ad_pack_ptr in this package’s shared library.</i>
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Description

Build parameters-shard ad_pack_ptr in this package’s shared library.

Usage

get_ad_pack_raw_parameters(model, config, name)

Arguments

model	density_data S4 object.
config	Model configuration list.
name	Parameters density name (e.g. "skewnormal_extra").

Value

External pointer of class ad_pack_ptr.

skewnormal	<i>Skew-normal observation term constructor</i>
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Description

Creates a response term wired to the skewnormal_obs AD shard.

Usage

```
skewnormal(  
  x,  
  init = c(0.1, 0.1),  
  lower = c(1e-09, -Inf),  
  upper = c(Inf, Inf),  
  parscale = c(1, 1),  
  log = c(TRUE, FALSE)  
)
```

Arguments

x	Outcome variable name.
init	Initial values for omega and alpha (log scale for omega).
lower	Lower bounds for omega and alpha.
upper	Upper bounds for omega and alpha.
parscale	Parameter scales for optimization.
log	Whether each theta is optimized on the log scale (length 2: omega, alpha).

Value

A skewnormal object.

skewnormal-class	<i>Skew-normal observation term</i>
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Description

Model term for the observation-level skew-normal log density registered as `skewnormal_obs`.

Usage

```
## S4 method for signature 'skewnormal'
design(term, data)

## S4 method for signature 'skewnormal'
precision(term, data)

## S4 method for signature 'skewnormal'
theta_info(term)

## S4 method for signature 'skewnormal'
beta_info(term, data)

## S4 method for signature 'skewnormal'
random_info(term, data)
```

Arguments

<code>term</code>	A skewnormal object.
<code>data</code>	A data frame (unused for this observation term).

Functions

- `design(skewnormal)`: Design method (not used for observation density).
- `precision(skewnormal)`: Precision method (not used).
- `theta_info(skewnormal)`: Theta info for skew-normal parameters.
Scale omega uses `log = TRUE` (log scale when `config$transform_theta` is not `FALSE`); shape alpha is untransformed.
- `beta_info(skewnormal)`: Beta info method (not used).
- `random_info(skewnormal)`: Random info method (not used).

Slots (inherited from model)

```
ad_pack Character scalar "skewnormal_obs".
ad_kind Character scalar "observations".
package Character scalar "adlaplaceExample".
```

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