

Package: adlaplaceExample (via r-universe)

July 17, 2026

Type Package

Title Example Backend for 'adlaplace'

Version 0.5.2

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 MPL-2.0

Depends R (>= 4.1.0)

LinkingTo Rcpp, adlaplace, RcppEigen, trustOptim, RCppAD

Imports Rcpp, adlaplace, RCppAD, methods

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

VignetteBuilder knitr

Config/testthat/edition 3

Encoding UTF-8

RoxygenNote 7.3.3

Roxygen list(markdown = TRUE)

NeedsCompilation yes

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

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

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get_ad_fun_raw_obs	<i>Build observation-shard ad_fun_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_fun_raw_obs(model, config, name)

Arguments

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

Value

External pointer of class ad_fun_ptr.

get_ad_fun_raw_parameters	<i>Build parameters-shard ad_fun_ptr in this package's shared library.</i>
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Description

Build parameters-shard ad_fun_ptr in this package's shared library.

Usage

get_ad_fun_raw_parameters(model, config, name)

Arguments

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

Value

External pointer of class `ad_fun_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)  
)
```

Arguments

- `x` Outcome variable name.
- `init` Initial values for ω and α (log scale for ω).
- `lower` Lower bounds for ω and α .
- `upper` Upper bounds for ω and α .
- `parscale` Parameter scales for optimization.

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

term	A skewnormal object.
data	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 `transform = TRUE` (log scale when `config$transform_theta` is `TRUE`);
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_fun Character scalar "skewnormal_obs".
ad_kind Character scalar "observations".
package Character scalar "adlaplaceExample".
```

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