

# Package ‘stabiliser’

January 5, 2022

**Title** Stabilising Variable Selection

**Version** 0.1.1

**Description** A stable approach to variable selection through stability selection and the use of an objective threshold based on a model from permuted data. Lima et al (2021) <doi:10.1038/s41598-020-79317-8>, Meinshausen and Bühlmann (2010) <doi:10.1111/j.1467-9868.2010.00740.x>.

**License** MIT + file LICENSE

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.1.1

**Config/testthat/edition** 3

**Depends** R (>= 3.0.0)

**Suggests** rmarkdown, testthat (>= 3.0.0), markdown

**Imports** glmnet, dplyr, bigstep, rsample, tibble, purrr, tidyr, stringr, ggplot2, broom, caret, ncvreg, knitr

**VignetteBuilder** knitr

**NeedsCompilation** no

**Author** Robert Hyde [aut, cre] (<<https://orcid.org/0000-0002-8705-9405>>),  
Martin Green [aut],  
Eliana Lima [aut]

**Maintainer** Robert Hyde <[robert.hyde4@nottingham.ac.uk](mailto:robert.hyde4@nottingham.ac.uk)>

**Repository** CRAN

**Date/Publication** 2022-01-05 15:50:02 UTC

## R topics documented:

stabilise . . . . .	2
stabiliser_example . . . . .	2
stab_plot . . . . .	3
triangulate . . . . .	3

<b>Index</b>	<b>4</b>
--------------	----------

---

stabilise	<i>stabilise</i>
-----------	------------------

---

### Description

Function to calculate stability of variables' association with an outcome for a given model over a number of bootstrap repeats

### Arguments

data	A dataframe containing an outcome variable to be permuted.
outcome	The outcome as a string (i.e. "y").
boot_reps	The number of bootstrap samples. Default is "auto" which selects number based on dataframe size.
permutations	The number of times to be permuted per repeat. Default is "auto" which selects number based on dataframe size.
perm_boot_reps	The number of times to repeat each set of permutations. Default is 5.
models	The models to select for stabilising. Default is elastic net (models = c("enet")), other available models include "lasso", "mbic", "mcp".
type	The type of model, either "linear" or "logistic"

### Value

A list for each model selected. Each list contains a dataframe of variable stabilities, a numeric permutation threshold, and a dataframe of coefficients for both bootstrap and permutation.

---

stabiliser_example	<i>stabiliser_example</i>
--------------------	---------------------------

---

### Description

A simulated dataset

### Usage

```
stabiliser_example
```

### Format

A data frame with 50 rows and 100 variables.

The stabiliser\_example dataset is a simulated example with the following properties: 1 simulated outcome variable: y 4 variables simulated to be associated with y: causal1, causal2... 95 variables simulated to have no association with y: junk1, junk2...

---

stab_plot	<i>stab_plot</i>
-----------	------------------

---

**Description**

Plot from stability object

**Arguments**

stabiliser\_outcome  
Outcome from stabilise() or triangulate() function.

**Value**

A ggplot object.

---

triangulate	<i>triangulate</i>
-------------	--------------------

---

**Description**

Triangulate multiple models using a stability object

**Arguments**

object            An object generated through the stabilise() function.

**Value**

A combined list of model results including a dataframe of stability results for variables and a numeric permutation threshold.

# Index

## \* datasets

stabiliser\_example, 2

stab\_plot, 3

stabilise, 2

stabiliser\_example, 2

triangulate, 3