

Package: rollshap (via r-universe)

March 22, 2025

Type Package

Title Rolling Shapley Values

Version 1.0

Date YYYY-MM-DD

Author Jason Foster

Maintainer Jason Foster <jason.j.foster@gmail.com>

Description Analytical computation of rolling Shapley values for time-series data.

License GPL (>= 2)

URL <https://github.com/jasonjfoster/rollshap>

BugReports <https://github.com/jasonjfoster/rollshap/issues>

Imports Rcpp, RcppParallel

LinkingTo Rcpp, RcppArmadillo, RcppParallel, roll (>= 1.1.7)

SystemRequirements GNU make

Roxygen list(old_usage = TRUE)

RoxygenNote 7.2.3

Encoding UTF-8

Config/pak/sysreqs make

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

RemoteUrl <https://github.com/jasonjfoster/rollshap>

RemoteRef HEAD

RemoteSha 8cecf619714a24c09a0923e927867b0c2ed2da8a

Contents

rollshap-package	2
roll_shap	2

Index	4
-------	---

rollshap-package	<i>Rolling Shapley Values</i>
------------------	-------------------------------

Description

Analytical computation of rolling Shapley values for time-series data.

Details

rollshap is a package that provides analytical computation of rolling Shapley values for time-series data.

Author(s)

Jason Foster

roll_shap	<i>Rolling Shapley Values</i>
-----------	-------------------------------

Description

A function for computing the rolling and expanding Shapley values of time-series data.

Usage

```
roll_shap(x, y, width, weights = rep(1, width), intercept = TRUE,
  min_obs = width, complete_obs = TRUE, na_restore = FALSE,
  online = TRUE)
```

Arguments

x	vector or matrix. Rows are observations and columns are the independent variables.
y	vector or matrix. Rows are observations and columns are the dependent variables.
width	integer. Window size.
weights	vector. Weights for each observation within a window.
intercept	logical. Either TRUE to include or FALSE to remove the intercept.
min_obs	integer. Minimum number of observations required to have a value within a window, otherwise result is NA.
complete_obs	logical. If TRUE then rows containing any missing values are removed, if FALSE then pairwise is used.
na_restore	logical. Should missing values be restored?
online	logical. Process observations using an online algorithm.

Value

An object of the same class and dimension as *x* with the rolling and expanding Shapley values.

Examples

```
n <- 15
m <- 3
x <- matrix(rnorm(n * m), nrow = n, ncol = m)
y <- rnorm(n)
weights <- 0.9 ^ (n:1)

# rolling Shapley values with complete windows
roll_shap(x, y, width = 5)

# rolling Shapley values with partial windows
roll_shap(x, y, width = 5, min_obs = 1)

# expanding Shapley values with partial windows
roll_shap(x, y, width = n, min_obs = 1)

# expanding Shapley values with partial windows and weights
roll_shap(x, y, width = n, min_obs = 1, weights = weights)
```

Index

`roll_shap`, [2](#)
`rollshap (rollshap-package)`, [2](#)
`rollshap-package`, [2](#)