

Package ‘RcppRoll’

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Type Package

Title Efficient Rolling / Windowed Operations

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Author Kevin Ushey

Maintainer Kevin Ushey <kevinushey@gmail.com>

Description Provides fast and efficient routines for common rolling / windowed operations. Routines for the efficient computation of windowed mean, median, sum, product, minimum, maximum, standard deviation and variance are provided.

License GPL (>= 2)

Depends R (>= 2.15.1)

Suggests zoo, testthat

Imports Rcpp

LinkingTo Rcpp

RoxygenNote 6.0.1

NeedsCompilation yes

Repository CRAN

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RcppRoll

RcppRoll

Description

This package implements a number of 'roll'-ing functions for R vectors and matrices.

Details

Currently, the exported functions are:

- `roll_max`
- `roll_mean`
- `roll_median`
- `roll_min`
- `roll_prod`
- `roll_sd`
- `roll_sum`
- `roll_var`

RcppRoll-exports

RcppRoll

Description

Efficient windowed / rolling operations. Each function here applies an operation over a moving window of size `n`, with (customizable) weights specified through `weights`.

Usage

```
roll_mean(x, n = 1L, weights = NULL, by = 1L, fill = numeric(0),
  partial = FALSE, align = c("center", "left", "right"), normalize = TRUE,
  na.rm = FALSE)
```

```
roll_meanr(x, n = 1L, weights = NULL, by = 1L, fill = NA,
  partial = FALSE, align = "right", normalize = TRUE, na.rm = FALSE)
```

```
roll_meanl(x, n = 1L, weights = NULL, by = 1L, fill = NA,
  partial = FALSE, align = "left", normalize = TRUE, na.rm = FALSE)
```

```
roll_median(x, n = 1L, weights = NULL, by = 1L, fill = numeric(0),
  partial = FALSE, align = c("center", "left", "right"), normalize = TRUE,
  na.rm = FALSE)
```

```
roll_medianr(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "right", normalize = TRUE, na.rm = FALSE)  
  
roll_medianl(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "left", normalize = TRUE, na.rm = FALSE)  
  
roll_min(x, n = 1L, weights = NULL, by = 1L, fill = numeric(0),  
  partial = FALSE, align = c("center", "left", "right"), normalize = TRUE,  
  na.rm = FALSE)  
  
roll_minr(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "right", normalize = TRUE, na.rm = FALSE)  
  
roll_minl(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "left", normalize = TRUE, na.rm = FALSE)  
  
roll_max(x, n = 1L, weights = NULL, by = 1L, fill = numeric(0),  
  partial = FALSE, align = c("center", "left", "right"), normalize = TRUE,  
  na.rm = FALSE)  
  
roll_maxr(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "right", normalize = TRUE, na.rm = FALSE)  
  
roll_maxl(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "left", normalize = TRUE, na.rm = FALSE)  
  
roll_prod(x, n = 1L, weights = NULL, by = 1L, fill = numeric(0),  
  partial = FALSE, align = c("center", "left", "right"), normalize = TRUE,  
  na.rm = FALSE)  
  
roll_prodr(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "right", normalize = TRUE, na.rm = FALSE)  
  
roll_prodl(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "left", normalize = TRUE, na.rm = FALSE)  
  
roll_sum(x, n = 1L, weights = NULL, by = 1L, fill = numeric(0),  
  partial = FALSE, align = c("center", "left", "right"), normalize = TRUE,  
  na.rm = FALSE)  
  
roll_sumr(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "right", normalize = TRUE, na.rm = FALSE)  
  
roll_suml(x, n = 1L, weights = NULL, by = 1L, fill = NA,  
  partial = FALSE, align = "left", normalize = TRUE, na.rm = FALSE)  
  
roll_sd(x, n = 1L, weights = NULL, by = 1L, fill = numeric(0),
```

```

partial = FALSE, align = c("center", "left", "right"), normalize = TRUE,
na.rm = FALSE)

roll_sdr(x, n = 1L, weights = NULL, by = 1L, fill = NA,
partial = FALSE, align = "right", normalize = TRUE, na.rm = FALSE)

roll_sdl(x, n = 1L, weights = NULL, by = 1L, fill = NA,
partial = FALSE, align = "left", normalize = TRUE, na.rm = FALSE)

roll_var(x, n = 1L, weights = NULL, by = 1L, fill = numeric(0),
partial = FALSE, align = c("center", "left", "right"), normalize = TRUE,
na.rm = FALSE)

roll_varr(x, n = 1L, weights = NULL, by = 1L, fill = NA,
partial = FALSE, align = "right", normalize = TRUE, na.rm = FALSE)

roll_varl(x, n = 1L, weights = NULL, by = 1L, fill = NA,
partial = FALSE, align = "left", normalize = TRUE, na.rm = FALSE)

```

Arguments

x	A numeric vector or a numeric matrix.
n	The window size. Ignored when weights is non-NULL.
weights	A vector of length n, giving the weights for each element within a window. If NULL, we take unit weights of width n.
by	Calculate at every by-th point rather than every point.
fill	Either an empty vector (no fill), or a vector (recycled to) length 3 giving left, middle and right fills.
partial	Partial application? Currently unimplemented.
align	Align windows on the "left", "center" or "right".
normalize	Normalize window weights, such that they sum to n.
na.rm	Remove missing values?

Details

The functions postfixed with `l` and `r` are convenience wrappers that set `left` / `right` alignment of the windowed operations.

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