Package 'csalert'

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Title Alerts from Public Health Surveillance Data

Version 2023.6.17

Description Helps create alerts and determine trends by using various methods to analyze public health surveillance data. The primary analysis method is based upon a published analytics strategy by Benedetti (2019) <doi:10.5588/pha.19.0002>.

Depends R (>= 3.3.0)

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URL https://www.csids.no/csalert/, https://github.com/csids/csalert

BugReports https://github.com/csids/csalert/issues

Encoding UTF-8

Imports data.table, magrittr, ggplot2, glm2, cstidy, cstime, stringr

Suggests testthat, knitr, rmarkdown, rstudioapi, glue, covidnor, csdata, csmaps, ggrepel, plnr

RoxygenNote 7.2.3

VignetteBuilder knitr

NeedsCompilation no

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R topics documented:

short_term_trend *Determine the short term trend of a timeseries*

Description

The method is based upon a published analytics strategy by Benedetti (2019) <doi:10.5588/pha.19.0002>.

Usage

```
short_term_trend(x, ...)

## S3 method for class 'csfmt_rts_data_v1'
short_term_trend(
  x,
  numerator,
  denominator = NULL,
  prX = 100,
  trend_dates = 42,
  remove_last_dates = 0,
  forecast_dates = trend_dates,
  trend_isoyearweeks = ceiling(trend_dates/7),
  remove_last_isoyearweeks = ceiling(remove_last_dates/7),
  forecast_isoyearweeks = trend_isoyearweeks,
  numerator_naming_prefix = "from_numerator",
  denominator_naming_prefix = "from_denominator",
  statistics_naming_prefix = "universal",
  remove_training_data = FALSE,
  ...
)
```

Arguments

x	Data object
...	Not in use.
numerator	Character of name of numerator
denominator	Character of name of denominator (optional)
prX	If using denominator, what scaling factor should be used for numerator/denominator?
trend_dates	Number of dates you want to check the trend
remove_last_dates	Number of dates you want to remove at the end (due to unreliable data)
forecast_dates	Number of dates you want to forecast into the future
trend_isoyearweeks	Same as trend_dates, but used if granularity_geo==’isoyearweek’
remove_last_isoyearweeks	Same as remove_last_dates, but used if granularity_geo==’isoyearweek’

`forecast_isoyearweeks`
: Same as forecast_dates, but used if granularity_geo=='isoyearweek'

`numerator_naming_prefix`
: "from_numerator", "generic", or a custom prefix

`denominator_naming_prefix`
: "from_denominator", "generic", or a custom prefix

`statistics_naming_prefix`
: "universal" (one variable for trend status, one variable for doubling dates), "from_numerator_and_prX" (If denominator is NULL, then one variable corresponding to numerator. If denominator exists, then one variable for each of the prXs)

`remove_training_data`
: Boolean. If TRUE, removes the training data (i.e. 1:(trend_dates-1) or 1:(trend_isoyearweeks-1)) from the returned dataset.

Value

The original csfmt_rts_data_v1 dataset with extra columns. *_trend*_status contains a factor with levels c("training", "forecast", "decreasing", "null", "increasing"), while *_doublingdays* contains the expected number of days before the numerator doubles.

Examples

```
d <- cstidy::nor_covid19_icu_and_hospitalization_csfmt_rts_v1
d <- d[granularity_time=="isoyearweek"]
res <- csalert::short_term_trend(
  d,
  numerator = "hospitalization_with_covid19_as_primary_cause_n",
  trend_isoyearweeks = 6
)
print(res[, .(
  isoyearweek,
  hospitalization_with_covid19_as_primary_cause_n,
  hospitalization_with_covid19_as_primary_cause_trend0_42_status
)])
```

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