Package ‘naive’

May 18, 2022

Type Package
Title Empirical Extrapolation of Time Feature Patterns
Version 1.0.0
Description An application for the empirical extrapolation of time features selecting and summarizing the most relevant patterns in time sequences.
License GPL-3
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Imports purrr (>= 0.3.4), ggplot2 (>= 3.3.5), readr (>= 2.1.2), lubridate (>= 1.7.10), imputeTS (>= 3.2), fANCOVA (>= 0.6-1), scales (>= 1.1.1), tictoc (>= 1.0.1), modeest (>= 2.4.0), moments (>= 0.14), greybox (>= 1.0.1), Rfast (>= 2.0.6)
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naive

Description
Empirical Extrapolation of Time Feature Pattern

Usage

naive(
  df,
  seq_len = NULL,
  ci = 0.8,
  smoother = FALSE,
  cover = NULL,
  stride = NULL,
  method = NULL,
  location = NULL,
  n_windows = 10,
  n_samp = 30,
  dates = NULL,
  error_scale = "naive",
  error_benchmark = "naive",
  seed = 42
)

Arguments

df A data frame with time features on columns. In case of missing values, automatic missing imputation through kalman filter will be performed.

seq_len Positive integer. Time-step number of the forecasting sequence. Default: NULL (random selection within boundaries).

ci Confidence interval for prediction. Default: 0.8

smoother Logical. Flag to TRUE for loess smoothing. Default: FALSE.

cover Positive numeric. The quantile cover around the location parameter (between 0 and 1). Default: NULL (random selection within boundaries).


location String. Statistic used to center the cover parameter. Possible options are: "mean", "mode" (parzen method), "median". Default: NULL (random selection within boundaries).


dates: Vector with dates for time features.

error_scale: String. Scale for the scaled error metrics. Two options: "naive" (average of naive one-step absolute error for the historical series) or "deviation" (standard error of the historical series). Default: "naive".

error_benchmark: String. Benchmark for the relative error metrics. Two options: "naive" (sequential extension of last value) or "average" (mean value of true sequence). Default: "naive".


Value

This function returns a list including:

- exploration: collection of all the models explored with random search
- history: a table with the explored models' hyper-parameters and validation errors
- best_model: best combination resulting from the average prediction score across different ranks and features, including:
  - quant_preds: min, max, q25, q50, q75, quantiles at selected ci, mean, sd, mode, skewness, kurtosis, IQR to range, median range ratio, upside probability and divergence for each point fo predicted sequences
  - errors: testing errors for each time feature averaged across validation windows
  - plots: standard plot with confidence interval for each time feature
- time_log

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See Also

Useful links:

- https://rpubs.com/giancarlo_vercellino/naive

Examples

naive(time_features[,c(2, 3)], seq_len = 100, n_samp = 1, n_windows = 3)
Description

A data frame with daily prices for some Big Tech Companies since March 2017.

Usage

time_features

Format

A data frame with 6 columns and 1336 rows.

Source

finance.yahoo.com
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