

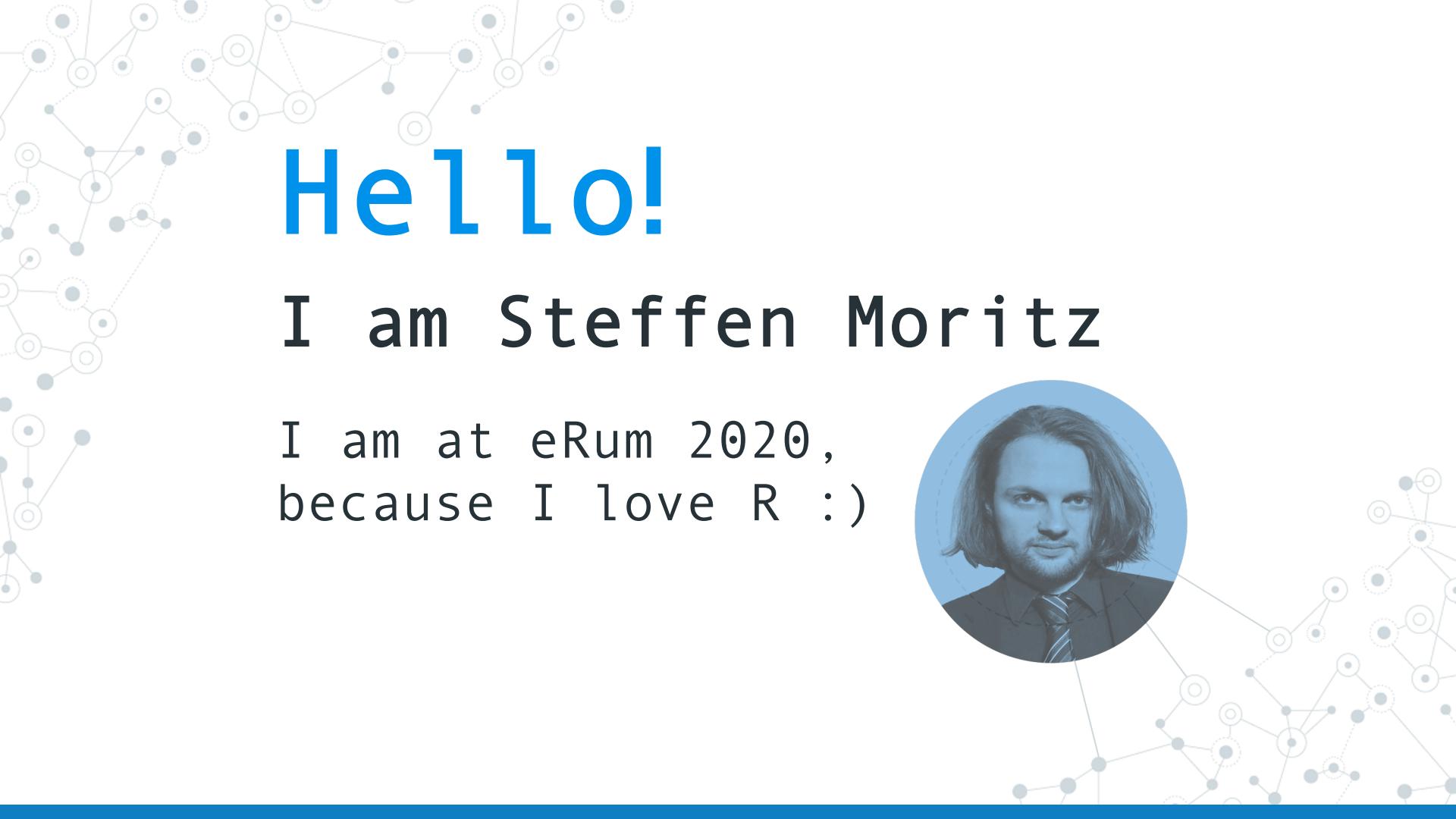


Time Series Missing Data Visualizations

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Hello!

I am Steffen Moritz

I am at eRum 2020,
because I love R :)

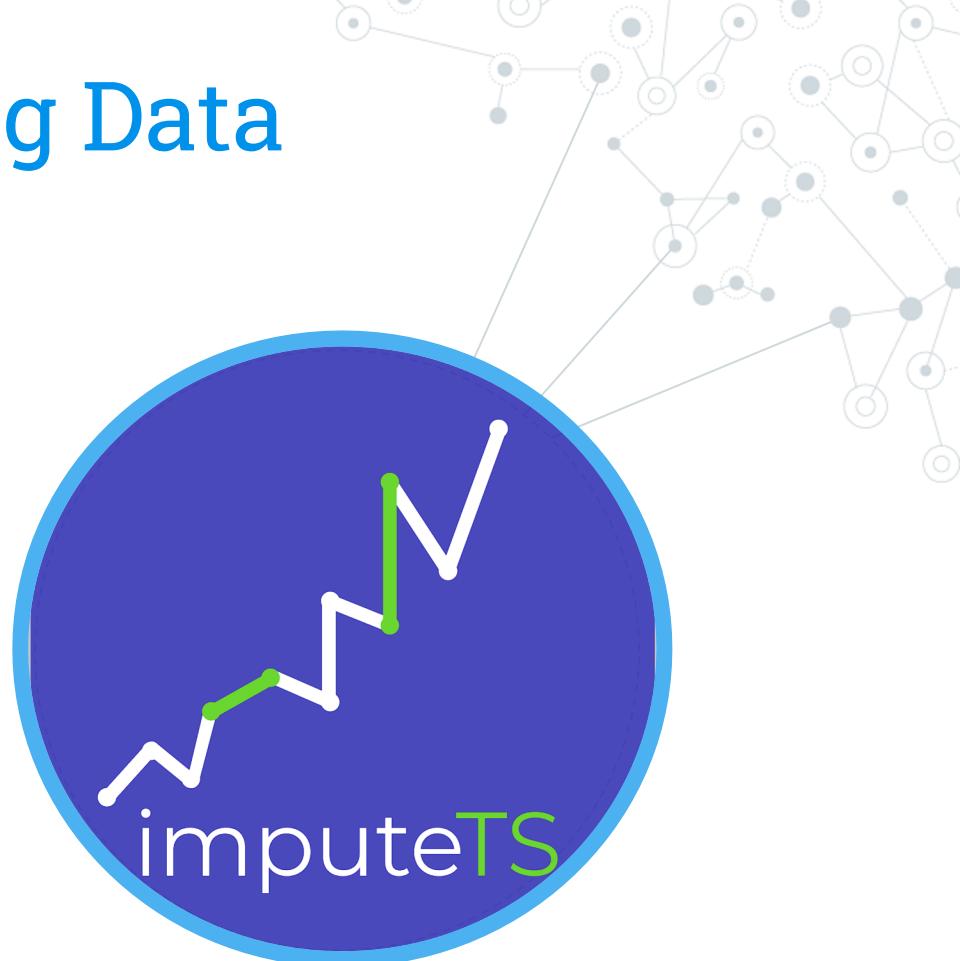


Time Series Missing Data

The `imputeTS` package helps with missing data in time series.

New plots with 3.1 Version!

(new version currently on Github soon on CRAN)



<https://github.com/SteffenMoritz/imputeTS>



Imputation

Replacing NAs

Visualization

Plotting NA distributions



Stats & Data

Statistics about the NAs

Features of the package

Imputation

Several functions for replacing missing data (imputation). Simple and advanced functions.

For example:

```
na_interpolation()  
na_kalman()
```

Visualization

Multiple functions for visualization of time series missing values.
[\(updated in 3.1 version\)](#)

For example:

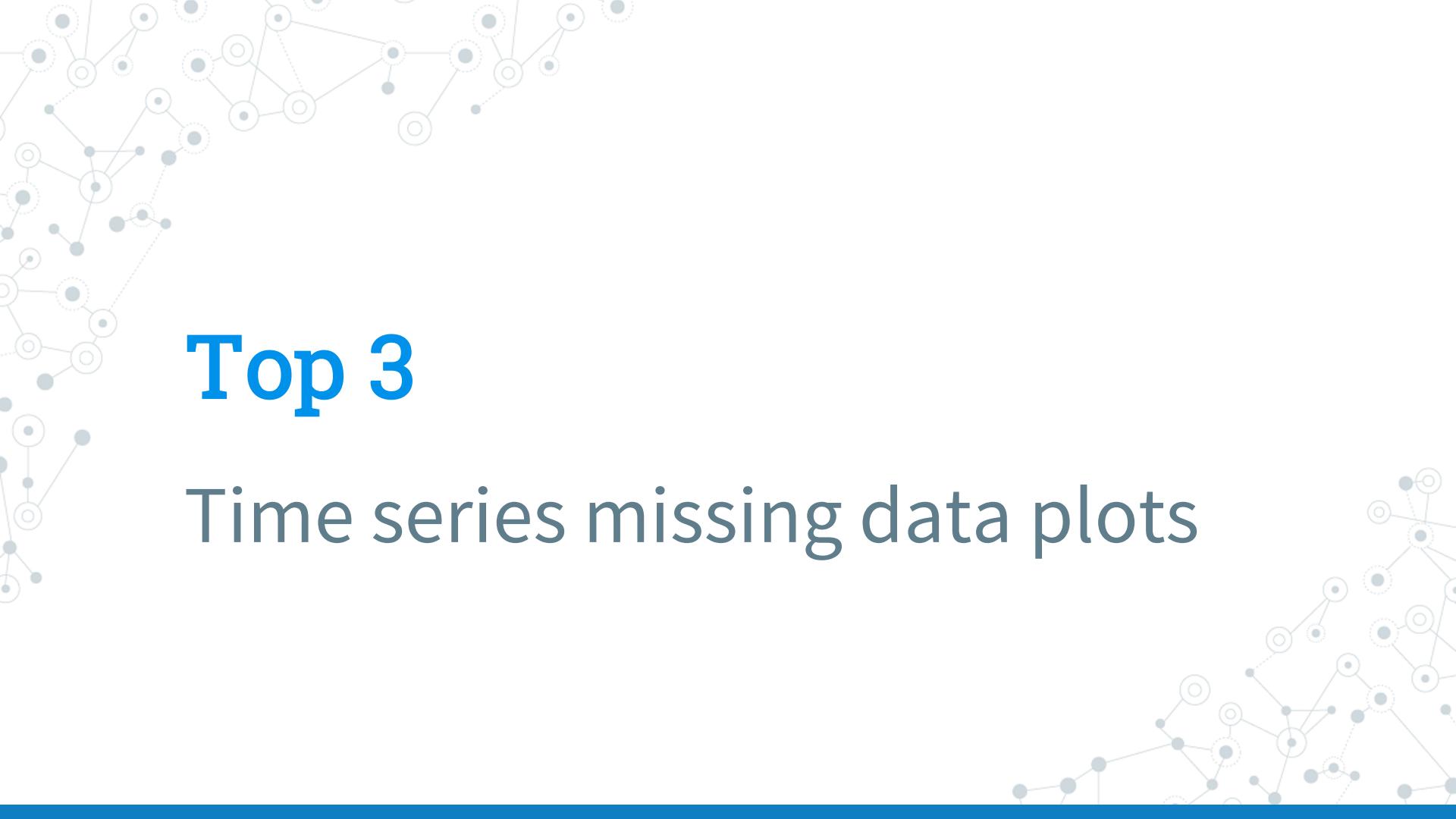
```
na_intervals()  
na_imputations()
```

Stats & more

Printing missing data statistics and benchmark datasets for time series missing data.

For example:

```
statsNA()  
tsNH4, tsHeating
```



Top 3

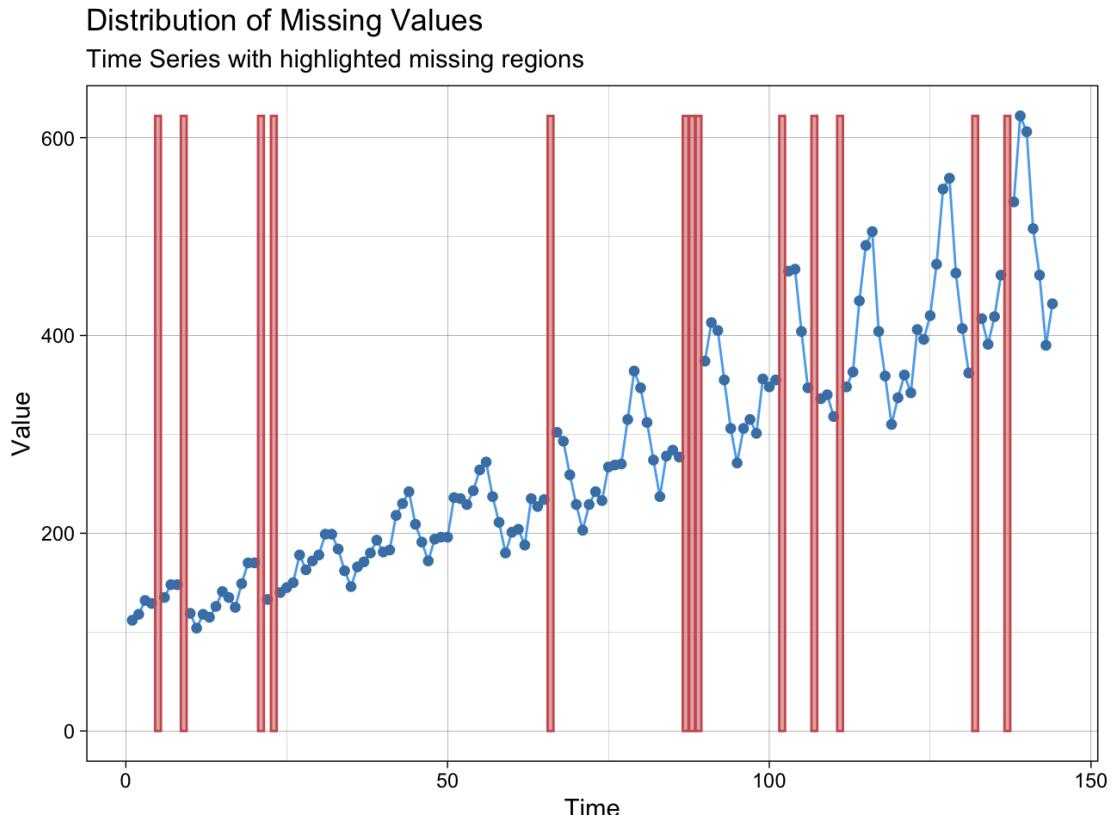
Time series missing data plots

Visualization of NA distribution

`ggplot_na_distribution()`

Getting an overview, where in the time series NAs are occurring.

```
tsAirgap %>%  
  ggplot_na_distribution()
```



Discovering Patterns

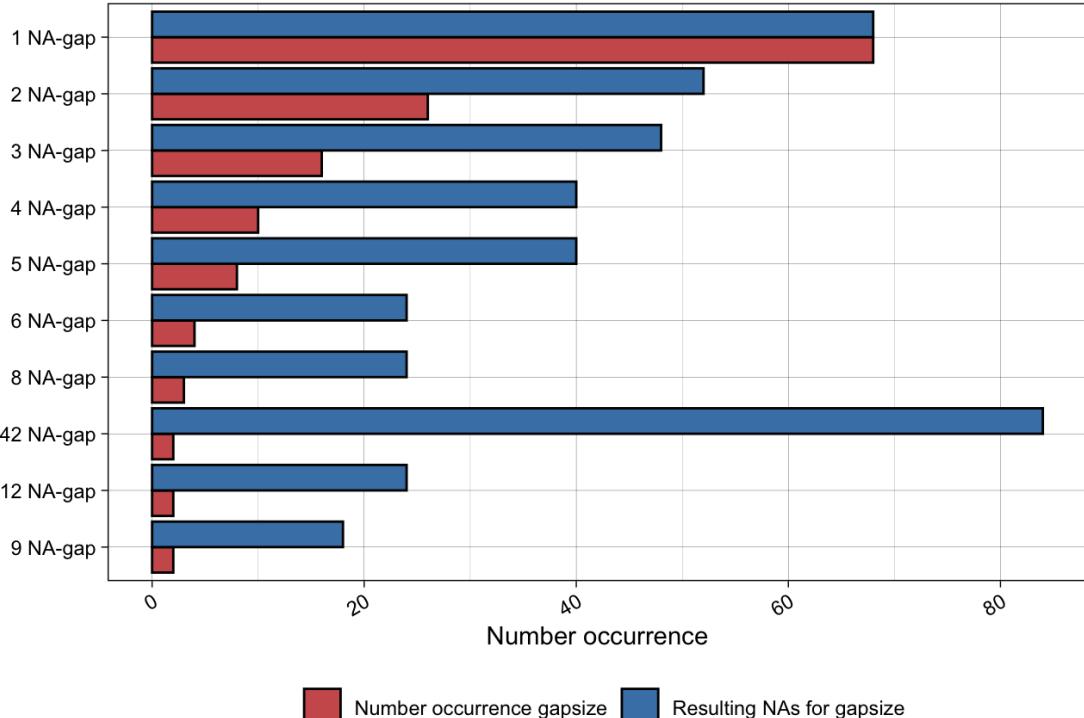
ggplot_na_gapsize()

For discovering patterns in the occurrence of missing data.

```
tsNH4 %>%  
  ggplot_na_gapsize()
```



Occurrence of gap sizes
Gap sizes (NAs in a row) ordered by most common



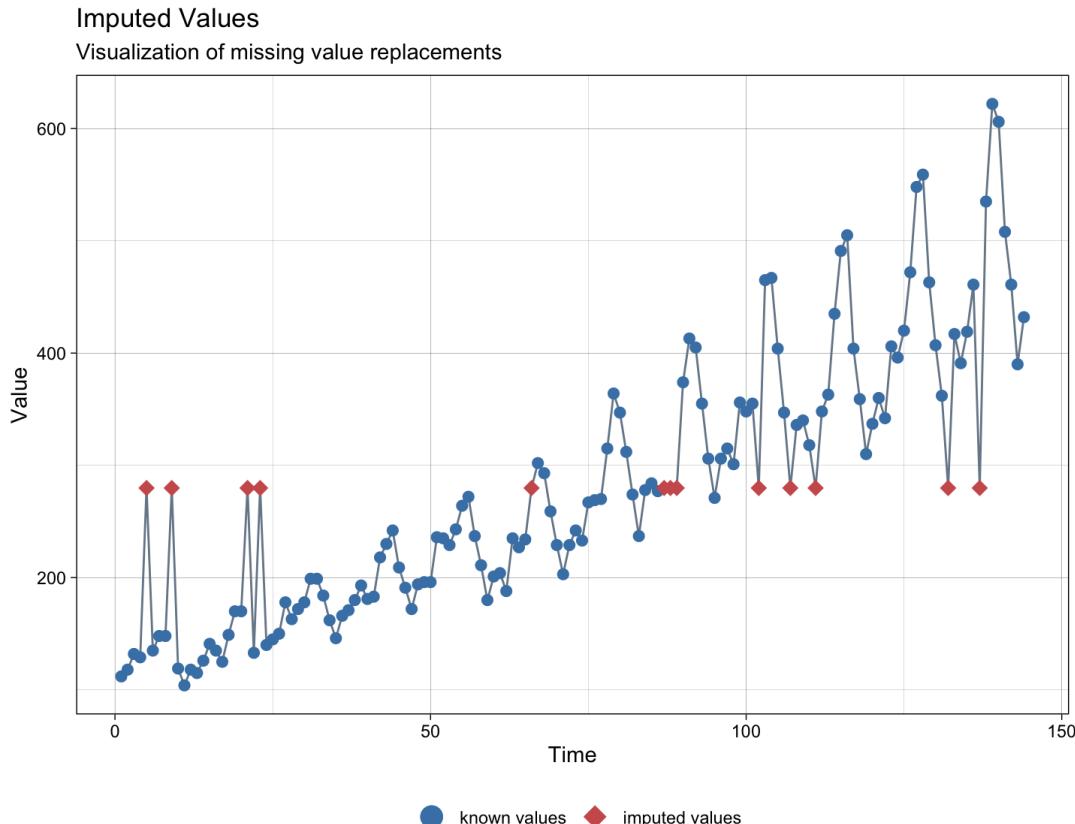
Visualization of Imputations

ggplot_na_imputations()

For assessing the performance of NA replacement (imputation) algorithms.

```
series <- tsAirgap  
imp <- na_mean(tsAirgap)
```

```
ggplot_na_imputations(series, imp)
```

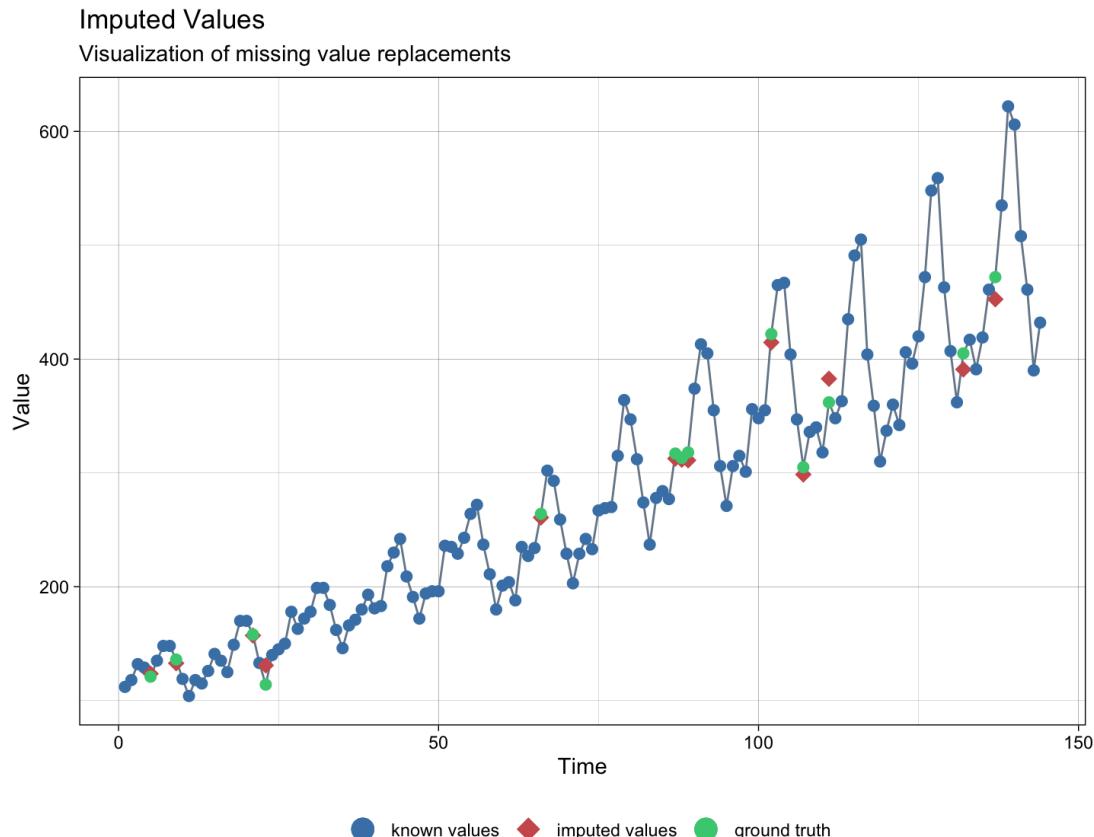


Visualization of Imputations

ggplot_na_imputations()

For assessing the performance of imputation algorithms.

```
series <- tsAirgap  
imp <- na_kalman(tsAirgap)  
  
ggplot_na_imputations(series, imp,  
tsAirgapComplete)
```



Interesting other packages about missing data visualization



naniar

Cross-Sectional Data, Tidy Style

Missing Data Task View

<https://cran.r-project.org/web/views/MissingData.html>

VIM

Cross-Sectional Data, Patterns, Distribution

visdat

General Data Exploration

Thanks.

Finished! Feel free to contact me for questions
and suggestions.

also visit <https://github.com/SteffenMoritz/imputeTS> for more information.