

Package: ggmmice (via r-universe)

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Title Visualizations for 'mice' with 'ggplot2'

Version 0.1.0.9000

Description Enhance a 'mice' imputation workflow with visualizations for incomplete and/or imputed data. The plotting functions produce 'ggplot' objects which may be easily manipulated or extended. Use 'ggmmice' to inspect missing data, develop imputation models, evaluate algorithmic convergence, or compare observed versus imputed data.

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URL <https://github.com/amices/ggmmice>, <https://amices.org/>,
<https://amices.org/ggmmice/>

BugReports <https://github.com/amices/ggmmice>

Imports cli, dplyr, ggplot2, magrittr, mice, purrr, rlang, stats, stringr, tidyr, tidyselect, utils

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bwplot	<i>Box-and-whisker plot of observed and imputed data</i>
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Description

Box-and-whisker plot of observed and imputed data

Usage

```
bwplot(...)
```

Arguments

... Any arguments passed to the function.

Value

The output of [mice::bwplot](#) and a message about the [ggmice](#) equivalent.

Examples

```
imp <- mice::mice(mice::nhanes, maxit = 1, printFlag = FALSE)
bwplot(imp)
```

densityplot	<i>Densityplot of observed and imputed data</i>
-------------	---

Description

Densityplot of observed and imputed data

Usage

```
densityplot(...)
```

Arguments

... Any arguments passed to the function.

Value

The output of `mice::densityplot` and a message about the ggmlce equivalent.

Examples

```
imp <- mice::mice(mice::nhanes, maxit = 1, printFlag = FALSE)
densityplot(imp)
```

ggmlce	<i>Plot incomplete or imputed data</i>
--------	--

Description

Plot incomplete or imputed data

Usage

```
ggmlce(data = NULL, mapping = ggplot2::aes())
```

Arguments

data An incomplete dataset (of class `data.frame`), or an object of class `mice::mids`.
mapping A list of aesthetic mappings created with `ggplot2::aes()`.

Value

An object of class `ggplot2::ggplot`. The `ggmice` function returns output equivalent to `ggplot2::ggplot` output, with a few important exceptions:

- The theme is set to `theme_mice`.
- The color scale is set to the `mice::mdc` colors.
- The colour aesthetic is set to `.where`, an internally defined variable which distinguishes observed data from missing data or imputed data (for incomplete and imputed data, respectively).

See Also

See the `ggmice` vignette to use the `ggmice()` function on [incomplete data](#) or [imputed data](#).

Examples

```
dat <- mice::nhanes
ggmice(dat, ggplot2::aes(x = age, y = bmi)) + ggplot2::geom_point()
imp <- mice::mice(dat, print = FALSE)
ggmice(imp, ggplot2::aes(x = age, y = bmi)) + ggplot2::geom_point()
```

plot_corr

Plot correlations between (incomplete) variables

Description

Plot correlations between (incomplete) variables

Usage

```
plot_corr(
  data,
  vrb = "all",
  label = FALSE,
  square = TRUE,
  diagonal = FALSE,
  rotate = FALSE,
  caption = TRUE
)
```

Arguments

<code>data</code>	A dataset of class <code>data.frame</code> , <code>tibble</code> , or <code>matrix</code> .
<code>vrb</code>	String, vector, or unquoted expression with variable name(s), default is "all".
<code>label</code>	Logical indicating whether correlation values should be displayed.
<code>square</code>	Logical indicating whether the plot tiles should be squares.

diagonal	Logical indicating whether the correlation of each variable with itself should be displayed.
rotate	Logical indicating whether the variable name labels should be rotated 90 degrees.
caption	Logical indicating whether the figure caption should be displayed.

Value

An object of class `ggplot2::ggplot`.

Examples

```
# plot correlations for all columns
plot_corr(mice::nhanes)

# plot correlations for specific columns by supplying a character vector
plot_corr(mice::nhanes, c("chl", "hyp"))

# plot correlations for specific columns by supplying unquoted variable names
plot_corr(mice::nhanes, c(chl, hyp))

# plot correlations for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_corr(mice::nhanes, !!my_variables)
# object with variable names must be unquoted with `!!`
try(plot_corr(mice::nhanes, my_variables))
```

plot_flux	<i>Plot the influx and outflux of a multivariate missing data pattern</i>
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Description

Plot the influx and outflux of a multivariate missing data pattern

Usage

```
plot_flux(data, vrb = "all", label = TRUE, caption = TRUE)
```

Arguments

data	An incomplete dataset of class <code>data.frame</code> or <code>matrix</code> .
vrb	String, vector, or unquoted expression with variable name(s), default is "all".
label	Logical indicating whether variable names should be displayed within the plot (the default) or with colors in the legend.
caption	Logical indicating whether the figure caption should be displayed.

Value

An object of class `ggplot2::ggplot`.

Examples

```
# plot flux for all columns
plot_flux(mice::nhanes)

# plot flux for specific columns by supplying a character vector
plot_flux(mice::nhanes, c("chl", "hyp"))

# plot flux for specific columns by supplying unquoted variable names
plot_flux(mice::nhanes, c(chl, hyp))

# plot flux for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_flux(mice::nhanes, !!my_variables)
# object with variable names must be unquoted with `!!`
try(plot_flux(mice::nhanes, my_variables))
```

plot_pattern

Plot the missing data pattern of an incomplete dataset

Description

Plot the missing data pattern of an incomplete dataset

Usage

```
plot_pattern(
  data,
  vrb = "all",
  square = TRUE,
  rotate = FALSE,
  cluster = NULL,
  npat = NULL,
  caption = TRUE
)
```

Arguments

data	An incomplete dataset of class <code>data.frame</code> or <code>matrix</code> .
vrb	String, vector, or unquoted expression with variable name(s), default is "all".
square	Logical indicating whether the plot tiles should be squares, defaults to squares to mimic <code>mice::md.pattern()</code> .

rotate	Logical indicating whether the variable name labels should be rotated 90 degrees.
cluster	Optional character string specifying which variable should be used for clustering (e.g., for multilevel data).
npat	Optional numeric input specifying the number of missing data patterns to be visualized, defaults to all patterns.
caption	Logical indicating whether the figure caption should be displayed.

Value

An object of class `ggplot2::ggplot`.

Examples

```
# plot missing data pattern for all columns
plot_pattern(mice::nhanes)

# plot missing data pattern for specific columns by supplying a character vector
plot_pattern(mice::nhanes, c("chl", "hyp"))

# plot missing data pattern for specific columns by supplying unquoted variable names
plot_pattern(mice::nhanes, c(chl, hyp))

# plot missing data pattern for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_pattern(mice::nhanes, !!my_variables)
# object with variable names must be unquoted with `!!!`
try(plot_pattern(mice::nhanes, my_variables))
```

plot_pred

Plot the predictor matrix of an imputation model

Description

Plot the predictor matrix of an imputation model

Usage

```
plot_pred(
  data,
  vrb = "all",
  method = NULL,
  label = TRUE,
  square = TRUE,
  rotate = FALSE
)
```

Arguments

data	A predictor matrix for mice, typically generated with <code>mice::make.predictorMatrix</code> or <code>mice::quickpred</code> .
vrbl	String, vector, or unquoted expression with variable name(s), default is "all".
method	Character string or vector with imputation methods.
label	Logical indicating whether predictor matrix values should be displayed.
square	Logical indicating whether the plot tiles should be squares.
rotate	Logical indicating whether the variable name labels should be rotated 90 degrees.

Value

An object of class `ggplot2::ggplot`.

Examples

```
# generate a predictor matrix
pred <- mice::quickpred(mice::nhanes)

# plot predictor matrix for all columns
plot_pred(pred)

# plot predictor matrix for specific columns by supplying a character vector
plot_pred(pred, c("chl", "hyp"))

# plot predictor matrix for specific columns by supplying unquoted variable names
plot_pred(pred, c(chl, hyp))

# plot predictor matrix for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_pred(pred, !!my_variables)
# object with variable names must be unquoted with `!!`
try(plot_pred(pred, my_variables))
```

plot_trace

Plot the trace lines of the imputation algorithm

Description

Plot the trace lines of the imputation algorithm

Usage

```
plot_trace(data, vrbl = "all")
```


Arguments

data	An object of class <code>mice::mids</code> .
vrbl	String, vector, or unquoted expression with variable name(s), default is "all".

Details

The `vrbl` argument is "quoted" via `rlang::enexpr()` and evaluated according to [tidy evaluation principles](#). In practice, this technical nuance only affects users when passing an object from the environment (e.g., a vector of variable names) to the `vrbl` argument. In such cases, the object must be "unquoted" via the `!!` prefix operator.

Value

An object of class `ggplot2::ggplot`.

Examples

```
# create [mice::mids] object with [mice::mice()]
imp <- mice::mice(mice::nhanes, print = FALSE)

# plot trace lines for all imputed columns
plot_trace(imp)

# plot trace lines for specific columns by supplying a string or character vector
plot_trace(imp, "chl")
plot_trace(imp, c("chl", "hyp"))
# plot trace lines for specific columns by supplying unquoted variable names
plot_trace(imp, chl)
plot_trace(imp, c(chl, hyp))

# plot trace lines for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_trace(imp, !!my_variables)
# object with variable names must be unquoted with `!!`
try(plot_trace(imp, my_variables))
```

stripplot

Strippplot of observed and imputed data

Description

Strippplot of observed and imputed data

Usage

```
stripplot(...)
```

Arguments

... Any arguments passed to the function.

Value

The output of `mice::stripplot` and a message about the ggmlce equivalent.

Examples

```
imp <- mice::mice(mice::nhanes, maxit = 1, printFlag = FALSE)
stripplot(imp)
```

theme_mice	Theme for <i>mice</i> style <i>ggplot2::ggplot</i> objects
------------	--

Description

Theme for *mice* style *ggplot2::ggplot* objects

Usage

```
theme_mice()
```

Value

A *ggplot2* theme.

theme_minimize	Minimal theme for <i>mice</i> style <i>ggplot2::ggplot</i> objects
----------------	--

Description

Minimal theme for *mice* style *ggplot2::ggplot* objects

Usage

```
theme_minimize()
```

Value

A *ggplot2* theme.

xyplot*Scatterplot of observed and imputed data*

Description

Scatterplot of observed and imputed data

Usage

```
xyplot(...)
```

Arguments

... Any arguments passed to the function.

Value

The output of [mice::xyplot](#) and a message about the ggmlmice equivalent.

Examples

```
imp <- mice::mice(mice::nhanes, maxit = 1, printFlag = FALSE)
xyplot(imp, bmi ~ age)
```

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