Package: ggmice (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 'ggmice' 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/ggmice, https://amices.org/, https://amices.org/ggmice/

BugReports https://github.com/amices/ggmice

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

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Contents

`bwplot` *Box-and-whisker plot of observed and imputed data*

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 *Densityplot of observed and imputed data*

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 ggmice equivalent.

Examples

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

ggmice *Plot incomplete or imputed data*

Description

Plot incomplete or imputed data

Usage

```
ggmice(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

data	A dataset of class data.frame, tibble, or matrix.
vrb	String, vector, or unquoted expression with variable name(s), default is "all".
label	Logical indicating whether correlation values should be displayed.
square	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 *Plot the influx and outflux of a multivariate missing data pattern*

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 `data.frame` or `matrix`.
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 data.frame or matrix.
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 mimick mice::md.pattern().

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 mice::make.predictorMatrix or mice::quickpred.
vrb	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, vrb = "all")
```

Arguments

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

Details

The vrb 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 vrb 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 *Stripplot of observed and imputed data*

Description

Stripplot 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 ggmice equivalent.

Examples

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

---

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

Description

Theme for mice style ggplot2::ggplot objects

Usage

```
theme_mice()
```

Value

A ggplot2 theme.

---

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

Description

Minimal theme for mice style ggplot2::ggplot objects

Usage

```
theme_minimice()
```

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 `ggmice` equivalent.

Examples

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

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