

# Package ‘gglm’

March 21, 2023

**Type** Package

**Title** Grammar of Graphics for Linear Model Diagnostic Plots

**Version** 1.0.2

**Description** Allows for easy creation of diagnostic plots for a variety of model objects using the Grammar of Graphics.  
Provides functionality for both individual diagnostic plots and an array of four standard diagnostic plots.

**License** CC0

**Encoding** UTF-8

**Depends** ggplot2

**Imports** broom, broom.mixed, dplyr, metafor, nlme, patchwork, purrr, tibble, tidyr, utils, rlang, vctrs

**Suggests** lme4

**URL** <https://github.com/graysonwhite/gglm>

**BugReports** <https://github.com/graysonwhite/gglm/issues>

**RoxygenNote** 7.2.3

**NeedsCompilation** no

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**Repository** CRAN

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gglm	<i>gglm</i>
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### Description

Provides four standard visual model diagnostic plots with ‘ggplot2’.

### Usage

```
gglm(data, theme = ggplot2::theme_gray(), ...)
```

### Arguments

data	A model object of type ‘lm’ or ‘glm’.
theme	The theme of the ‘ggplot’s to be produced.
...	Currently ignored. For extendability.

### Value

A a ‘ggplot2’ object for visual diagnostic of model validity.

### Examples

```
data(mtcars)
m1 <- lm(mpg ~ cyl + disp + hp, data = mtcars)
ggglm(m1)
```

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list_model_classes	<i>list_model_classes</i>
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### Description

Returns the possible model classes that ‘ggglm’ works with.

### Usage

```
list_model_classes(...)
```

### Arguments

...	Currently ignored. For extendability.
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**Value**

A character vector containing the possible model classes that 'ggglm' works with.

**Note**

Note that these are not always the exact name of the class that that can be used. This is due to how some methods are written in the packages 'ggglm' imports. For example, the model class "merMod" refers to a variety of model outputs from 'lme4', even when the outputted class is not called "merMod".

**Examples**

```
list_model_classes()
```

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```
stat_cooks_leverage  stat_cooks_leverage
```

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**Description**

Cook's Distance vs. Leverage

**Usage**

```
stat_cooks_leverage(  
  alpha = 0.5,  
  method = "loess",  
  color = "steelblue",  
  se = FALSE,  
  ...  
)
```

**Arguments**

alpha	Adjust transparency of points.
method	Method for fitting the line to the points.
color	Color of the line.
se	Keep standard error bands around line?
...	Currently ignored. For extendability.

**Value**

A 'ggplot2' layer for plotting Cook's Distance vs. Leverage.

**Examples**

```
data(mtcars)  
model <- lm(mpg ~ cyl + disp + hp, data = mtcars)  
ggplot2::ggplot(data = model) + stat_cooks_leverage()
```

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stat_cooks_obs	<i>stat_cooks_obs</i>
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**Description**

‘ggplot2’ layer for plotting cook’s distance by observation number.

**Usage**

```
stat_cooks_obs(...)
```

**Arguments**

... Currently ignored. For extendability.

**Value**

A ‘ggplot2’ layer for plotting cook’s distance by observation number.

**Examples**

```
data(mtcars)
model <- lm(mpg ~ cyl + disp + hp, data = mtcars)
ggplot2::ggplot(data = model) + stat_cooks_obs()
```

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stat_fitted_resid	<i>stat_fitted_resid</i>
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**Description**

‘ggplot2’ layer for plotting a fitted vs. residual scatter plot.

**Usage**

```
stat_fitted_resid(alpha = 0.5, ...)
```

**Arguments**

alpha Adjust transparency of points.  
... Currently ignored. For extendability.

**Value**

A ‘ggplot2’ layer for plotting a fitted vs. residual scatter plot.

**Examples**

```
data(mtcars)
model <- lm(mpg ~ cyl + disp + hp, data = mtcars)
ggplot2::ggplot(data = model) + stat_fitted_resid()
```

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stat_normal_qq	<i>stat_normal_qq</i>
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**Description**

Normal QQ plot.

**Usage**

```
stat_normal_qq(alpha = 0.5, ...)
```

**Arguments**

alpha	Adjust transparency of points.
...	Currently ignored. For extendability.

**Value**

A 'ggplot2' layer for plotting a Normal Q-Q plot.

**Examples**

```
data(mtcars)
model <- lm(mpg ~ cyl + disp + hp, data = mtcars)
ggplot2::ggplot(data = model) + stat_normal_qq()
```

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stat_resid_hist	<i>stat_resid_hist</i>
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**Description**

Visualize the distribution of the residuals of a model.

**Usage**

```
stat_resid_hist(bins = 30, ...)
```

**Arguments**

bins	Adjust the number of bins.
...	Currently ignored. For extendability.

**Value**

A 'ggplot2' layer for plotting a histogram of residuals.

**Examples**

```
data(mtcars)
model <- lm(mpg ~ cyl + disp + hp, data = mtcars)
ggplot2::ggplot(data = model) + stat_resid_hist()
```

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stat\_resid\_leverage    *stat\_resid\_leverage*

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**Description**

Residual vs. leverage plot.

**Usage**

```
stat_resid_leverage(
  alpha = 0.5,
  method = "loess",
  se = FALSE,
  color = "steelblue",
  ...
)
```

**Arguments**

alpha	Adjust transparency of points.
method	Method for fitting the line to the points.
se	Keep standard error bands around line?
color	Color of the line.
...	Currently ignored. For extendability.

**Value**

A 'ggplot2' layer for plotting a fitted vs. residual scatter plot.

**Examples**

```
data(mtcars)
model <- lm(mpg ~ cyl + disp + hp, data = mtcars)
ggplot2::ggplot(data = model) + stat_resid_leverage()
```

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stat\_scale\_location    *stat\_scale\_location*

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**Description**

Scale location diagnostic plot.

**Usage**

```
stat_scale_location(  
  alpha = 0.5,  
  na.rm = TRUE,  
  se = FALSE,  
  method = "loess",  
  color = "steelblue",  
  ...  
)
```

**Arguments**

alpha	Adjust the transparency of points.
na.rm	Remove points with value NA?
se	Keep standard error bands around line?
method	Method for fitting the line to the points.
color	Color of the line.
...	Currently ignored. For extendability.

**Value**

A 'ggplot2' layer for plotting the scale location diagnostic plot.

**Examples**

```
data(mtcars)  
model <- lm(mpg ~ cyl + disp + hp, data = mtcars)  
ggplot2::ggplot(data = model) + stat_scale_location()
```

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