

Package ‘ggtintshade’

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Type Package

Title Tinting and Shading Aesthetics for 'ggplot2'

Version 0.1.2

Description Adds a 'tintshade' aesthetic to 'ggplot2' that varies the lightness of a mapped 'colour' or 'fill' within each hue group, keeping the plotted layer and its legend in sync. Supports both nested designs (each item belongs to one hue) and crossed designs (each lightness level appears across hues).

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Encoding UTF-8

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Depends R (>= 4.1), ggplot2 (>= 4.0.0)

Imports cli, colorspace, grDevices, scales, stats

Suggests gtable, knitr, rmarkdown, patchwork, testthat (>= 3.0.0),
vdiff

Config/testthat/edition 3

URL <https://github.com/wkumler/ggtintshade>

BugReports <https://github.com/wkumler/ggtintshade/issues>

VignetteBuilder knitr

NeedsCompilation no

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geom_tintshade	<i>Geoms with a tintshade aesthetic</i>
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Description

Drop-in tintshade variants of common ggplot2 geoms. Map colour or fill to a hue and tintshade to a within-hue lightness; whichever of colour/fill carries the hue is tinted automatically (or both, if both are mapped). The plotted layer and its legend stay in sync.

Usage

```
geom_point_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_jitter_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "jitter",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_line_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_path_tintshade(  
  mapping = NULL,
```

```
data = NULL,  
stat = "identity",  
position = "identity",  
...,  
na.rm = FALSE,  
show.legend = NA,  
inherit.aes = TRUE  
)
```

```
geom_step_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_area_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "align",  
  position = "stack",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_ribbon_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_bar_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "count",  
  position = "stack",  
  ...,
```

```
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

  geom_col_tintshade(
    mapping = NULL,
    data = NULL,
    stat = "identity",
    position = "stack",
    ...,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

  geom_histogram_tintshade(
    mapping = NULL,
    data = NULL,
    stat = "bin",
    position = "stack",
    ...,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

  geom_boxplot_tintshade(
    mapping = NULL,
    data = NULL,
    stat = "boxplot",
    position = "dodge2",
    ...,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

  geom_violin_tintshade(
    mapping = NULL,
    data = NULL,
    stat = "ydensity",
    position = "dodge",
    ...,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )
)
```

```
geom_tile_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_raster_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_rect_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_polygon_tintshade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_segment_tintshade(  
  mapping = NULL,  
  data = NULL,
```

```
    stat = "identity",
    position = "identity",
    ...,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )
```

```
geom_text_tintshade(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
geom_label_tintshade(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
geom_crossbar_tintshade(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
geom_errorbar_tintshade(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  na.rm = FALSE,
```

```

    show.legend = NA,
    inherit.aes = TRUE
  )

  geom_linerange_tintshade(
    mapping = NULL,
    data = NULL,
    stat = "identity",
    position = "identity",
    ...,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

  geom_pointrange_tintshade(
    mapping = NULL,
    data = NULL,
    stat = "identity",
    position = "identity",
    ...,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping, data, stat, position, na.rm, show.legend, inherit.aes, ...

Standard `ggplot2::layer()` arguments, with the same defaults as the corresponding plain ggplot2 geom.

Value

A ggplot2 layer.

See Also

[scale_tintshade_discrete\(\)](#), [guide_tintshade\(\)](#)

Examples

```

library(ggplot2)
df <- data.frame(
  g = rep(c("a", "b", "c"), each = 3),
  item = rep(c("lo", "mid", "hi"), 3),
  x = rep(1:3, each = 3), y = runif(9)
)
ggplot(df, aes(x, y, colour = g, tintshade = item)) +
  geom_point_tintshade(size = 4)

```

```
ggplot(diamonds) +
  geom_bar_tintshade(aes(x=cut, fill = cut, tintshade = clarity), color="black")

mpgsub <- head(mpg, 60)
mpgsub$model <- factor(mpgsub$model, levels=unique(mpgsub$model))
ggplot(mpgsub, aes(displ, hwy, colour = manufacturer, tintshade = model)) +
  geom_point_tintshade(size = 3)

ggplot(penguins[!is.na(penguins$bill_len),]) +
  geom_point_tintshade(aes(x=bill_len, y=bill_dep, fill=species, tintshade=sex),
    pch=21, color="black", size=3)
```

guide_tintshade	<i>Legend guide for the tintshade aesthetic</i>
-----------------	---

Description

A `ggplot2::guide_legend()` whose keys are recoloured to match the tinted layer. The tintshade scale uses this guide by default.

Usage

```
guide_tintshade(
  title = ggplot2::waiver(),
  type = c("auto", "unique", "crossed"),
  theme = NULL,
  position = NULL,
  direction = NULL,
  override.aes = list(),
  nrow = NULL,
  ncol = NULL,
  reverse = FALSE,
  order = 0,
  ...
)
```

Arguments

title	Legend title. Defaults to the mapped variable name.
type	How to colour the legend keys: • "auto" (default): a key is drawn in its hue when its tintshade level maps to a single hue (a nested design) and in neutral grey when it co-occurs with several (a crossed design, where lightness is hue-independent). • "unique": always use the hue. • "crossed": always use neutral grey.

theme	A theme object to style the guide individually or differently from the plot's theme settings. The theme argument in the guide partially overrides, and is combined with, the plot's theme. Arguments that apply to a single legend are respected, most of which have the legend-prefix. Arguments that apply to combined legends (the legend box) are ignored, including legend.position, legend.justification.*, legend.location and legend.box.*.
position	A character string indicating where the legend should be placed relative to the plot panels. One of "top", "right", "bottom", "left", or "inside".
direction	A character string indicating the direction of the guide. One of "horizontal" or "vertical".
override.aes	A list specifying aesthetic parameters of legend key. See details and examples.
nrow, ncol	The desired number of rows and column of legends respectively.
reverse	logical. If TRUE the order of legends is reversed.
order	positive integer less than 99 that specifies the order of this guide among multiple guides. This controls the order in which multiple guides are displayed, not the contents of the guide itself. If 0 (default), the order is determined by a secret algorithm.
...	Additional arguments passed on to ggplot2::new_guide() .

Value

A guide object.

See Also

[scale_tintshade_discrete\(\)](#)

Examples

```
library(ggplot2)
df <- expand.grid(hue = c("good", "bad"), level = c("lo", "hi"))
df$y <- 1
ggplot(df, aes(hue, y, fill = hue, tintshade = level)) +
  geom_col_tintshade(position = "dodge") +
  guides(tintshade = guide_tintshade(type = "crossed"))
```

scale_tintshade	<i>Lightness (tintshade) scales</i>
-----------------	-------------------------------------

Description

Map a variable to a lightness tint. The mapped value runs from 0 (black) through 0.5 (the base hue) to 1 (white); the geom rescales these within each hue group so the ramp restarts per group.

Usage

```
scale_tintshade_discrete(
  ...,
  range = c(0.2, 0.8),
  aesthetics = "tintshade",
  guide = guide_tintshade()
)

scale_tintshade_continuous(
  ...,
  range = c(0.2, 0.8),
  aesthetics = "tintshade",
  guide = guide_tintshade()
)
```

Arguments

...	Passed to <code>ggplot2::discrete_scale()</code> or <code>ggplot2::continuous_scale()</code> .
range	Numeric length-2 output range within <code>[0, 1]</code> . Defaults to <code>c(0.2, 0.8)</code> (dark to pale, base hue in the middle).
aesthetics	Aesthetic this scale applies to. Defaults to <code>"tintshade"</code> .
guide	The legend guide. Defaults to <code>guide_tintshade()</code> ; pass a configured <code>guide_tintshade(...)</code> to customise the legend.

Value

A ggplot2 scale object.

See Also

[guide_tintshade\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(x = 1:3, y = 1:3, g = "a", item = c("lo", "mid", "hi"))
ggplot(df, aes(x, y, colour = g, tintshade = item)) +
  geom_point_tintshade(size = 4) +
  scale_tintshade_discrete(range = c(0.1, 0.9))
```

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