Package ‘viridis’

May 11, 2021

Type   Package
Title  Colorblind-Friendly Color Maps for R
Version 0.6.1
Maintainer Simon Garnier <garnier@njit.edu>
Description Color maps designed to improve graph readability for readers with common forms of color blindness and/or color vision deficiency. The color maps are also perceptually-uniform, both in regular form and also when converted to black-and-white for printing. This package also contains ‘ggplot2’ bindings for discrete and continuous color and fill scales. A lean version of the package called ‘viridisLite’ that does not include the ‘ggplot2’ bindings can be found at <https://cran.r-project.org/package=viridisLite>.
License MIT + file LICENSE
Encoding UTF-8
Depends R (>= 2.10), viridisLite (>= 0.4.0)
Imports stats, ggplot2 (>= 1.0.1), gridExtra
Suggests hexbin (>= 1.27.0), scales, MASS, knitr, dichromat, colorspace, rasterVis, httr, mapproj, vdiffr, svglite (>= 1.2.0), testthat, covr, rmarkdown, rgdal
LazyData true
VignetteBuilder knitr
BugReports https://github.com/sjmgarnier/viridis/issues
RoxygenNote 7.1.1
NeedsCompilation no
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Noam Ross [ctb, cph],
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scale_fill_viridis

Description

Scale functions (fill and colour/color) for `ggplot2`.
For `discrete = FALSE` (the default) all other arguments are as to `scale_fill_gradientn` or `scale_color_gradientn`. Otherwise the function will return a `discrete_scale` with the plot-computed number of colors.

See `viridis` and `viridis.map` for more information on the color palettes.

Usage

```r
scale_fill_viridis(
  ..., 
  alpha = 1,
  begin = 0,
  end = 1,
  direction = 1,
  discrete = FALSE,
  option = "D"
)
```

```r
scale_color_viridis(
  ..., 
  alpha = 1,
  begin = 0,
  end = 1,
  direction = 1,
  discrete = FALSE,
  option = "D"
)
```
scale_colour_viridis(
  ..., 
  alpha = 1, 
  begin = 0, 
  end = 1, 
  direction = 1, 
  discrete = FALSE, 
  option = "D" 
)

Arguments

... Parameters to discrete_scale if discrete == TRUE, or scale_fill_gradientn/scale_color_gradientn if discrete == FALSE.

alpha The alpha transparency, a number in [0,1], see argument alpha in hsv.

begin The (corrected) hue in [0,1] at which the color map begins.

direction Sets the order of colors in the scale. If 1, the default, colors are as output by viridis_pal. If -1, the order of colors is reversed.

begin The (corrected) hue in [0,1] at which the color map begins.

discrete Generate a discrete palette? (default: FALSE - generate continuous palette).

option A character string indicating the color map option to use. Eight options are available:

- "magma" (or "A")
- "inferno" (or "B")
- "plasma" (or "C")
- "viridis" (or "D")
- "cividis" (or "E")
- "rocket" (or "F")
- "mako" (or "G")
- "turbo" (or "H")

Author(s)

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Simon Garnier: <garnier@njit.edu> / @sjmgarnier

Examples

library(ggplot2)

# Ripped from the pages of ggplot2
p <- ggplot(mtcars, aes(wt, mpg))
p + geom_point(size = 4, aes(colour = factor(cyl))) +
  scale_color_viridis(discrete = TRUE) +
  theme_bw()
# Ripped from the pages of ggplot2

dsub <- subset(diamonds, x > 5 & x < 6 & y > 5 & y < 6)
dsub$diff <- with(dsub, sqrt(abs(x - y)) * sign(x - y))
d <- ggplot(dsub, aes(x, y, colour = diff)) + geom_point()
d + scale_color_viridis() + theme_bw()

# From the main viridis example

dat <- data.frame(x = rnorm(10000), y = rnorm(10000))

ggplot(dat, aes(x = x, y = y)) +
  geom_hex() + coord_fixed() +
  scale_fill_viridis() + theme_bw()

library(ggplot2)
library(MASS)
library(gridExtra)

data("geyser", package="MASS")

ggplot(geyser, aes(x = duration, y = waiting)) +
  xlim(0.5, 6) + ylim(40, 110) +
  stat_density2d(aes(fill = ..level..), geom = "polygon") +
  theme_bw() +
  theme(panel.grid = element_blank()) -> gg

grid.arrange(
  gg + scale_fill_viridis(option = "A") + labs(x = "Viridis A", y = NULL),
  gg + scale_fill_viridis(option = "B") + labs(x = "Viridis B", y = NULL),
  gg + scale_fill_viridis(option = "C") + labs(x = "Viridis C", y = NULL),
  gg + scale_fill_viridis(option = "D") + labs(x = "Viridis D", y = NULL),
  gg + scale_fill_viridis(option = "E") + labs(x = "Viridis E", y = NULL),
  gg + scale_fill_viridis(option = "F") + labs(x = "Viridis F", y = NULL),
  gg + scale_fill_viridis(option = "G") + labs(x = "Viridis G", y = NULL),
  gg + scale_fill_viridis(option = "H") + labs(x = "Viridis H", y = NULL),
  ncol = 4, nrow = 2
)

---

**unemp**

USA Unemployment in 2009

**Description**

A data set containing the 2009 unemployment data in the USA by county.

**Usage**

unemp
viridis_pal

Format

A data frame with 3218 rows and 8 variables:

- **id** the county ID number
- **state_fips** the state FIPS number
- **county_fips** the county FIPS number
- **name** the county name
- **year** the year
- **rate** the unemployment rate
- **county** the county abbreviated name
- **state** the state acronym

Source

http://datasets.flowingdata.com/unemployment09.csv

viridis_pal  

viridis Color Palettes

Description

A wrapper function around *viridis* to turn it into a palette function compatible with *discrete_scale*.

Usage

viridis_pal(alpha = 1, begin = 0, end = 1, direction = 1, option = "D")

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>alpha</td>
<td>The alpha transparency, a number in [0,1], see argument alpha in <em>hsv</em>.</td>
</tr>
<tr>
<td>begin</td>
<td>The (corrected) hue in [0,1] at which the color map begins.</td>
</tr>
<tr>
<td>end</td>
<td>The (corrected) hue in [0,1] at which the color map ends.</td>
</tr>
<tr>
<td>direction</td>
<td>Sets the order of colors in the scale. If 1, the default, colors are ordered from darkest to lightest. If -1, the order of colors is reversed.</td>
</tr>
<tr>
<td>option</td>
<td>A character string indicating the color map option to use. Eight options are available:</td>
</tr>
<tr>
<td></td>
<td>• &quot;magma&quot; (or &quot;A&quot;)</td>
</tr>
<tr>
<td></td>
<td>• &quot;inferno&quot; (or &quot;B&quot;)</td>
</tr>
<tr>
<td></td>
<td>• &quot;plasma&quot; (or &quot;C&quot;)</td>
</tr>
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<td></td>
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</tr>
<tr>
<td></td>
<td>• &quot;cividis&quot; (or &quot;E&quot;)</td>
</tr>
<tr>
<td></td>
<td>• &quot;rocket&quot; (or &quot;F&quot;)</td>
</tr>
<tr>
<td></td>
<td>• &quot;mako&quot; (or &quot;G&quot;)</td>
</tr>
<tr>
<td></td>
<td>• &quot;turbo&quot; (or &quot;H&quot;)</td>
</tr>
</tbody>
</table>
Details

See *viridis* and *viridis.map* for more information on the color palettes.

Author(s)

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Simon Garnier: <garnier@njit.edu> / @sjmgarnier

Examples

```r
library(scales)
show_col(viridis_pal()(12))
```
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