Package 'ggallin'

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Type Package

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Title Grab Bag of 'ggplot2' Functions

BugReports https://github.com/shabbychef/ggallin/issues

Description Extra geoms and scales for 'ggplot2', including geom_cloud(),
a Normal density cloud replacement for errorbars;
transforms ssqrt_trans and pseudolog10_trans, which are loglike but
appropriate for negative data; interp_trans() and warp_trans() which
provide scale transforms based on interpolation;
and an infix compose operator for scale transforms.

Depends ggplot2 (>= 2.2.1)

Suggests knitr, testthat

Imports scales, grid

RoxygenNote 7.3.2

URL https://github.com/shabbychef/ggallin

Collate 'geom_cloud.R' 'ggallin.R' 'transforms.R'

NeedsCompilation no

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`ggallin-package` *Grab Bag of GGplot2 Functions.*

Description

This package consists of some helper functions for working with `ggplot2`: geoms, transforms, *etc.*, with no real unifying theme among them.

Legal Mumbo Jumbo

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See Also

Useful links:

- `https://github.com/shabbychef/ggallin`
- Report bugs at `https://github.com/shabbychef/ggallin/issues`

`geom_cloud` *geom_cloud*

Description

Draw a normal uncertainty cloud as a ribbon

Draws overlapping ribbons of the same identity to create a cloud of (Gaussian) uncertainty. Similar to an errorbar geom in use, but visually less distracting (sometimes).

Usage

```
geom_cloud(
  mapping = NULL,
  data = NULL,
  ...,
  na.rm = TRUE,
  steps = 7,
  se_mult = 1,
  max_alpha = 1,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings created by aes(). If specified and inherit.aes = TRUE (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If NULL, the default, the data is inherited from the plot data as specified in the call to ggplot(). A data.frame, or other object, will override the plot data. All objects will be fortified to produce a data frame. See fortify() for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a data.frame, and will be used as the layer data. A function can be created from a formula (e.g. ~ head(.x, 10)).
...	Other arguments passed on to layer()'s params argument. These arguments broadly fall into one of 4 categories below. Notably, further arguments to the position argument, or aesthetics that are required can *not* be passed through .... Unknown arguments that are not part of the 4 categories below are ignored. • Static aesthetics that are not mapped to a scale, but are at a fixed value and apply to the layer as a whole. For example, colour = "red" or linewidth = 3. The geom's documentation has an **Aesthetics** section that lists the available options. The 'required' aesthetics cannot be passed on to the params. Please note that while passing unmapped aesthetics as vectors is technically possible, the order and required length is not guaranteed to be parallel to the input data. • When constructing a layer using a stat_*() function, the ... argument can be used to pass on parameters to the geom part of the layer. An example of this is stat_density(geom = "area", outline.type = "both"). The geom's documentation lists which parameters it can accept. • Inversely, when constructing a layer using a geom_*() function, the ... argument can be used to pass on parameters to the stat part of the layer. An example of this is geom_area(stat = "density", adjust = 0.5). The stat's documentation lists which parameters it can accept.

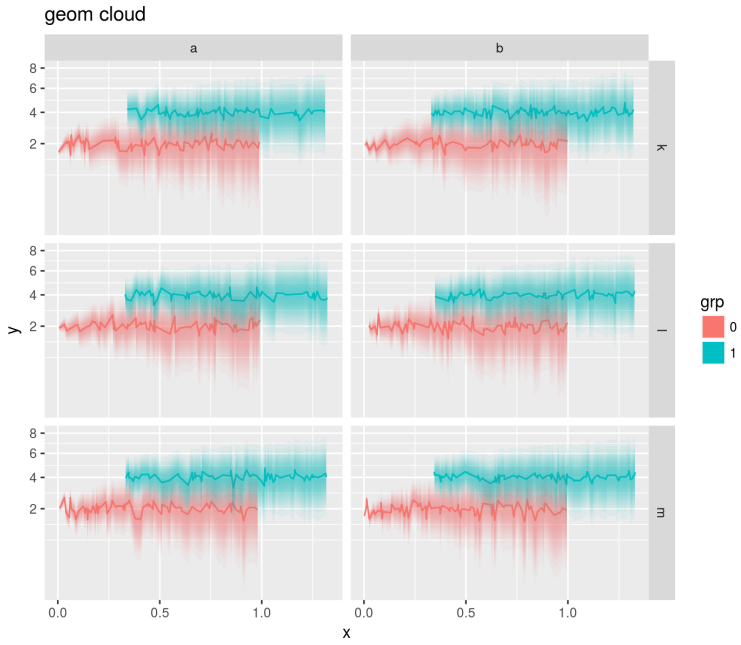
- The key_glyph argument of layer() may also be passed on through .... This can be one of the functions described as key glyphs, to change the display of the layer in the legend.

na.rm	If FALSE, the default, missing values are removed with a warning. If TRUE, missing values are silently removed.
steps	The integer number of steps, or equivalently, the number of overlapping ribbons. A larger number makes a smoother cloud at the possible expense of rendering time. Values larger than around 20 are typically not necessary.
se_mult	The 'multiplier' of standard errors of the given ymin and ymax. If these are at one standard error, then let se_mult take the default value of 1.
max_alpha	The maximum alpha at the maximum density. The cloud will have alpha no greater than this value.
inherit.aes	If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. borders().

Details

Assumes that ymin and ymax are plotted at a fixed number of standard errors away from y, then computes a Gaussian density with that standard deviation, plotting a cloud (based on geom_ribbon) with alpha proportional to the density. This appears as a vertical 'cloud' of uncertainty. In use, this geom should be comparable to geom_errorbar.

A sample output from geom_cloud:



Aesthetics

geom_cloud understands the following aesthetics (required aesthetics are in bold):

- x
- y
- ymin
- ymax
- fill

Only one of ymin and ymax is strictly required.

Note

This is a thin wrapper on the geom_ribbon geom.

Author(s)

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See Also

geom_ribbon: The underlying geom

Examples

```
set.seed(2134)
nobs <- 200
mydat <- data.frame(grp=sample(c(0,1),nobs,replace=TRUE),
  colfac=sample(letters[1:2],nobs,replace=TRUE),
  rowfac=sample(letters[10 + (1:3)],nobs,replace=TRUE))
mydat$x <- seq(0,1,length.out=nobs) + 0.33 * mydat$grp
mydat$y <- 0.25 * rnorm(nobs) + 2 * mydat$grp
mydat$grp <- factor(mydat$grp)
mydat$se  <- sqrt(mydat$x)

ggplot(mydat,aes(x=x,y=y,ymin=y-se,ymax=y+se,color=grp)) +
facet_grid(rowfac ~ colfac) +
geom_line() +
geom_errorbar() +
labs(title='uncertainty by errorbar')

ggplot(mydat,aes(x=x,y=y,ymin=y-se,ymax=y+se,fill=grp)) +
facet_grid(rowfac ~ colfac) +
geom_line() +
geom_cloud(steps=15,max_alpha=0.85) +
labs(title='uncertainty by cloudr')
```

ggallin-NEWS *News for package 'ggallin':*

Description

News for package 'ggallin'

Version 0.1.2 (2025-11-26)

- fixing figure width styling for CRAN

Version 0.1.1 (2017-10-01)

- submit to CRAN

interp_trans *Interpolation based scale transforms.*

Description

Interpolation based scale transformations. The user supplies x and y (which should be monotonic increasing or decreasing in x) to create a scale transformation based on linear interpolation.

A 'warp' transformation is also supported wherein the user supplies x and w where, after sorting on x, the cumulative sum of w are used as the y in an interpolation transformation. Here w are the rate of increase, or 'weights'.

Usage

```
interp_trans(x=NULL,y=NULL,data=NULL,na.rm=TRUE,breaks=NULL,format=NULL)

warp_trans(x=NULL,w=NULL,data=NULL,na.rm=TRUE,breaks=NULL,format=NULL)
```

Arguments

x	the x coordinates for linear interpolation.
y	the y coordinates for linear interpolation.
data	A data.frame with columns of x and y for interp_trans or x and w for warp_trans. If data is given, it takes precedence over the given x, y, w.
na.rm	If TRUE, then missing x or y will be removed.
breaks	default breaks function for this transformation. The breaks function is applied to the un-transformed data.
format	default format for this transformation. The format is applied to breaks generated on the un-transformed data.
w	the w coordinates for the 'warp' interpolation. The cumulative sum of w are computed then fed to the interpolation transform.

Value

A scale transformation object.

Author(s)

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See Also

trans_new.

Examples

```
set.seed(1234)
ggplot(data.frame(x=rnorm(100),y=runif(100)),aes(x=x,y=y)) +
  geom_point() +
  scale_x_continuous(trans=interp_trans(x=seq(-10,10,by=1),y=cumsum(runif(21))))

set.seed(1234)
ggplot(data.frame(x=rnorm(100),y=runif(100)),aes(x=x,y=y)) +
  geom_point() +
  scale_x_continuous(trans=warp_trans(x=seq(-10,10,by=1),w=runif(21)))

# equivalently:
set.seed(1234)
ggplot(data.frame(x=rnorm(100),y=runif(100)),aes(x=x,y=y)) +
  geom_point() +
  scale_x_continuous(trans=warp_trans(data=data.frame(x=seq(-10,10,by=1),w=runif(21))))

# this is like trans_sqrt:
set.seed(1234)
myx <- seq(0,5,by=0.01)
ggplot(data.frame(x=rnorm(100),y=runif(100)),aes(x=x,y=y)) +
  geom_point() +
  scale_y_continuous(trans=interp_trans(x=myx,y=sqrt(myx)))
```

---

ssqrt_trans *Various scale transforms.*

Description

Various scale transformations.

Usage

```
ssqrt_trans

pseudolog10_trans
```

Format

An object of class `transform` of length 9.

An object of class `transform` of length 9.

Details

The available transforms:

- `ssqrt_trans` a signed square root transform appropriate for negative or positive numbers.
- `pseudolog10_trans` an `asinh` transformation, which is like a logarithm, but appropriate for negative or positive numbers. This transformation was taken from the Win Vector blog, https://win-vector.com/2012/03/01/modeling-trick-the-signed-pseudo-logarithm/.

Value

A scale transformation object.

Author(s)

Steven E. Pav <shabbychef@gmail.com>

See Also

`trans_new`.

https://win-vector.com/2012/03/01/modeling-trick-the-signed-pseudo-logarithm/

Examples

```
set.seed(1234)
ggplot(data.frame(x=rnorm(100),y=runif(100)),aes(x=x,y=y)) +
  geom_point() +
  scale_x_continuous(trans=ssqrt_trans)

set.seed(1234)
ggplot(data.frame(x=rnorm(100),y=runif(100)),aes(x=x,y=y)) +
  geom_point() +
  scale_x_continuous(trans=pseudolog10_trans)
```

%of% *Composition of scale transforms.*

Description

A binary infix operator that allows one to compose together two scale transformations. We should have that the transformation `atrans %of% btrans` first applies `btrans`, then applies `atrans` to the results. This is useful for reversing scales, for example, along with other transformations.

Usage

```
atrans %of% btrans
```

Arguments

atrans	a transformation object.
btrans	a transformation object.

Value

a transformation object that perfroms atrans on the output of btrans.

Author(s)

Steven E. Pav <shabbychef@gmail.com>

See Also

trans_new.

Examples

```
set.seed(1234)
# compose transformatins with %of%:
ggplot(data.frame(x=rnorm(100),y=exp(rnorm(100,mean=-2,sd=4))),aes(x=x,y=y)) +
  geom_point() +
  scale_y_continuous(trans=scales::reverse_trans() %of% scales::log10_trans())
```

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