Package ‘Rmisc’

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Description Contains many functions useful for data analysis and utility operations.
License GPL-3
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Depends lattice, plyr
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‘rsi.R’ ‘summarySE.R’
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CI

Confidence Interval

Description
Calculates the confidence interval of a vector of data.

Usage
CI(x, ci = 0.95)

Arguments
x a vector of data

Arguments
x a vector of data
ci the confidence interval to be calculated

Value
upper Upper bound of interval.
mean Mean of data.
lower Lower bound of interval.

Examples
CI(rnorm(100))

group.CI

Group Confidence Interval

Description
Calculates the confidence interval of grouped data

Usage
group.CI(x, data, ci = 0.95)

Arguments
x an ‘aggregate’ compatible formula
data a data frame (or list) from which the variables in formula should be taken
ci the confidence interval to be calculated
Value

A data frame consisting of one column for each grouping factor plus three columns for the upper bound, mean and lower bound of the confidence interval for each level of the grouping factor.

Examples

```r
require(latticeExtra)
with(group.CI(weight~feed,chickwts),
    segplot(feed~weight.lower+weight.upper,center=weight.mean)
)
```

```r
require(Hmisc)
with(group.CI(Temp~Month,airquality),
    xYplot(Cbind(Temp.mean,Temp.lower,Temp.upper)~numericScale(Month),type="b",ylim=c(60,90))
)
```

---

**group.STDERR**

*Group Standard Error Interval*

Description

Calculates the standard error interval of grouped data.

Usage

```
group.STDERR(x, data)
```

Arguments

- `x` an 'aggregate' compatible formula
- `data` a data frame (or list) from which the variables in formula should be taken.

Value

A data frame consisting of one column for each grouping factor plus three columns for the upper bound, mean and lower bound of the standard error interval for each level of the grouping factor.

Examples

```r
require(latticeExtra)
with(group.STDERR(weight~feed,chickwts),
    segplot(feed~weight.lower+weight.upper,center=weight.mean)
)
```

```r
require(Hmisc)
with(group.STDERR(Temp~Month,airquality),
    xYplot(Cbind(Temp.mean,Temp.lower,Temp.upper)~numericScale(Month),type="b",ylim=c(60,90))
)
```
group.UCL  

*Group Upper-Center-Lower*

**Description**

Applies a function which calculates a parameter with lower/upper bounds to groups of data.

**Usage**

```r
group.UCL(x, data, FUN, ...)
```

**Arguments**

- `x`: an ‘aggregate’ compatible formula
- `data`: a data frame (or list) from which the variables in formula should be taken.
- `FUN`: the function to apply to each group
- `...`: extra params passed on to aggregate

**Value**

A data frame consisting of one column for each grouping factor plus three columns for the upper bound, mean and lower bound of the standard error interval for each level of the grouping factor.

**Examples**

```r
require(latticeExtra)
with(group.UCL(weight~feed,chickwts,FUN=CI),
   segplot(feed~weight.lower+weight.upper,center=weight.mean)
)

require(Hmisc)
with(group.UCL(Temp~Month,airquality,FUN=STDERR),
   xYplot(Cbind(Temp.mean,Temp.lower,Temp.upper)-numericScale(Month),type="b",ylim=c(60,90))
)
```

lr.glover  

*Likelihood Ratio Test*

**Description**

Computes a likelihood ratio statistic which reflects the relative likelihood of the data given two competing models.

**Usage**

```r
lr.glover(object, ..., name = NULL)
```
multiplot

Arguments

object an object. See below for details.
... further object specifications passed to methods. See below for details.
name a function for extracting a suitable name/description from a fitted model object.
By default the name is queried by calling formula.

Value

An object of class "anova" which contains the log-likelihood, degrees of freedom, the difference in degrees of freedom, likelihood ratio, and AIC/BIC corrected likelihood ratios.

Details

lr.glover performs comparisons of models via likelihood ratio tests. The default method consecu-
tively compares the fitted model object object with the models passed in .... Subsequently, a likelihood ratio test for each two consecutive models is carried out.

References


Examples

m1 <- lm(mpg~.,mtcars)
m2 <- step(m1,~.,trace=0)
m3 <- step(m1,~.+.^2,trace=0)
lr.glover(m1,m2,m3)

multiplot

Multiple plot function

Description

Renders multiple ggplot plots in one image

Usage

multiplot(..., plotlist = NULL, cols = 1, layout = NULL)

Arguments

... ggplot objects
plotlist a list of ggplot objects
cols Number of columns in layout
layout A matrix specifying the layout. If present, 'cols' is ignored
normDataWithin

Note

If the layout is something like matrix(c(1,2,3,3), nrow=2, byrow=TRUE), then plot 1 will go in the upper left, 2 will go in the upper right, and 3 will go all the way across the bottom.

References

http://www.cookbook-r.com/Graphs/Multiple_graphs_on_one_page_(ggplot2)

\begin{verbatim}

normDataWithin

\end{verbatim}

Normalize within-group data

Description

Norms the data within specified groups in a data frame; it normalizes each subject (identified by idvar) so that they have the same mean, within each group specified by betweenvars.

Usage

\begin{verbatim}
normDataWithin(data = NULL, idvar, measurevar, betweenvars = NULL, na.rm = FALSE, .drop = TRUE)
\end{verbatim}

Arguments

- data: a data frame.
- idvar: the name of a column that identifies each subject (or matched subjects)
- measurevar: the name of a column that contains the variable to be summarized
- betweenvars: a vector containing names of columns that are between-subjects variables
- na.rm: a boolean that indicates whether to ignore NA’s
- .drop: should combinations of variables that do not appear in the input data be preserved (FALSE) or dropped (TRUE, default)

Value

a data frame with normalized data

References

http://www.cookbook-r.com/Graphs/Plotting_means_and_error_bars_(ggplot2)
panel.circle

Description

A panel function for drawing circles.

Usage

```
panel.circle(x, y, r, segments = 50L, groups = NULL, ...)
```

Arguments

- `x`: The x coordinate of the circle center
- `y`: The y coordinate of the circle center
- `r`: The radius of the circle
- `segments`: The number of polygon segments used to create the circle
- `groups`: A factor defining groups
- `...`: Additional arguments passed to panel.polygon

Examples

```
panel.circle(0, 0, 10)
```

rounder

Round to Increment

Description

Rounds a value to nearest increment

Usage

```
rounder(x, inc, fun = "round")
```

Arguments

- `x`: The value to be rounded
- `inc`: The increment to round to
- `fun`: The rounding function. Valid options are 'floor', 'round' and 'ceiling'.

Value

an object of class numeric
Examples

rounder(.92, .05)
rounder(.93, .05)
rounder(.93, .05, "floor")
rounder(.93, .05, "ceiling")

rsi  Run Start Indices

Description

Find the starting indices of runs in a vector.

Usage

rsi(x)

Arguments

x  a vector of data.

Value

a vector of indices indicating starting points for runs

Examples

rsi(c(0,0,0,1,2,2,3,3,3,3,3,4))

STDERR  Standard Error

Description

Calculates the standard error interval of a vector of data

Usage

STDERR(x)

Arguments

x  a vector of data.
**summarySE**

**Value**

| lower | Lower bound of interval. |
| mean  | Mean of data.            |
| upper | Upper bound of interval. |

**Examples**

```r
STDERR(rnorm(100))
```

---

**summarySE**  
*Summarizes data*

**Description**

Gives count, mean, standard deviation, standard error of the mean, and confidence interval (default 95%).

**Usage**

```r
summarySE(data = NULL, measurevar, groupvars = NULL, na.rm = FALSE, conf.interval = 0.95, .drop = TRUE)
```

**Arguments**

- `data` a data frame
- `measurevar` the name of a column that contains the variable to be summarized
- `groupvars` a vector containing names of columns that contain grouping variables
- `na.rm` a boolean that indicates whether to ignore NA’s
- `conf.interval` the percent range of the confidence interval (default is 95%)
- `drop` should combinations of variables that do not appear in the input data be preserved (FALSE) or dropped (TRUE, default)

**Value**

a data frame with count, mean, standard deviation, standard error of the mean, and confidence interval (default 95%).

**References**

http://www.cookbook-r.com/Graphs/Plotting_means_and_error_bars_(ggplot2)
summarySEwithin

Summarize within-subjects data

Description

Summarizes data, handling within-subjects variables by removing inter-subject variability. It will still work if there are no within-S variables. Gives count, mean, standard deviation, standard error of the mean, and confidence interval (default 95%). If there are within-subject variables, calculate adjusted values using method from Morey (2008).

Usage

```
summarySEwithin(data = NULL, measurevar, betweenvars = NULL, withinvars = NULL, idvar = NULL, na.rm = FALSE, conf.interval = 0.95, .drop = TRUE)
```

Arguments

data            a data frame
measurevar      the name of a column that contains the variable to be summarized
betweenvars     a vector containing names of columns that are between-subjects variables
withinvars      a vector containing names of columns that are within-subjects variables
idvar           the name of a column that identifies each subject (or matched subjects)
na.rm           a boolean that indicates whether to ignore NA’s
conf.interval   the percent range of the confidence interval (default is 95%)
.drop           should combinations of variables that do not appear in the input data be preserved (FALSE) or dropped (TRUE, default)

Value

a data frame with count, mean, standard deviation, standard error of the mean, and confidence interval (default 95%).

References

http://www.cookbook-r.com/Graphs/Plotting_means_and_error_bars_(ggplot2)
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