Package 'sigr'

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Type Package

Title Succinct and Correct Statistical Summaries for Reports

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URL `https://github.com/WinVector/sigr/`,
`https://winvector.github.io/sigr/`

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BugReports `https://github.com/WinVector/sigr/issues`

Description Succinctly and correctly format statistical summaries of various models and tests (F-test, Chi-Sq-test, Fisher-test, T-test, and rank-significance). The main purpose is unified reporting of experimental results, working around issue such as the difficulty of extracting model summary facts (such as with 'lm'/'glm'). This package also includes empirical tests, such as bootstrap estimates.

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LazyData TRUE

RoxygenNote 6.1.1

Depends R (>= 3.2.1)

Imports wrapr (>= 1.8.8), stats

Suggests pwr, parallel, knitr, rmarkdown, RUnit

VignetteBuilder knitr

ByteCompile true

NeedsCompilation no

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R topics documented:

`as.character.sigr_statistic` *as.character*

Description

as.character

Usage

```
## S3 method for class 'sigr_statistic'
as.character(x, ...)
```

Arguments

`x`	sigr wrapper to print
`...`	extra arguments for sigr::render

Value

formatted string

Examples

```
as.character(wrapSignificance(1/300))
```

`Bernoulli_diff_stat` *Compute the distribution of differences of replacement samples of two Binomial or Bernoulli experiments.*

Description

Assuming `max(nA,nB) %% min(nA,nB) == 0`: compute the distribution of differences of weighted sums between `max(1,nB/nA)*sum(a)` and `max(1,nA/nB)*sum(b)` where `a` is a 0/1 vector of length `nA` with each item 1 with independent probability `(kA+kB)/(nA+nB)`, and `b` is a 0/1 vector of length `nB` with each item 1 with independent probability `(kA+kB)/(nA+nB)`. Then return the significance of a direct two-sided test that the absolute value of this difference is at least as large as the test_rate_difference (if supplied) or the empirically observed rate difference `abs(nB*kA-nA*kB)/(nA*nB)`. The idea is: under this scaling differences in success rates between the two processes are easily observed as differences in counts returned by the scaled processes. The method can be used to get the exact probability of a given difference under the null hypothesis that both the `A` and `B` processes have the same success rate `(kA+kB)/(nA+nB)`. When `nA` and `nB` don't divide evenly into to each other two calculations are run with the larger process is alternately padded and truncated to look like a larger or smaller experiment that meets the above conditions. This gives us a good range of significances.

Usage

```
Bernoulli_diff_stat(kA, nA, kB, nB, test_rate_difference, common_rate)
```

Arguments

`kA`	number of A successes observed.
`nA`	number of A experiments.
`kB`	number of B successes observed.
`nB`	number of B experiments.
`test_rate_difference`	numeric, difference in rate of A-B to test. Note: it is best to specify this prior to looking at the data.
`common_rate`	rate numeric, assumed null-rate.

Details

Note the intent is that we are measuring the results of an A/B test with `max(nA,nB) %% min(nA,nB) == 0` (no padding needed), or `max(nA,nB) >> min(nA,nB)` (padding is small effect).

The idea of converting a rate problem into a counting problem follows from reading Wald's *Sequential Analysis*.

For very small p-values the calculation is sensitive to rounding in the observed ratio-difference, as an arbitrarily small change in test-rate can move an entire set of observed differences in or out of the significance calculation.

Value

Bernoulli difference test statistic.

Examples

```
Bernoulli_diff_stat(2000, 5000, 100, 200)
Bernoulli_diff_stat(2000, 5000, 100, 200, 0.1)
Bernoulli_diff_stat(2000, 5000, 100, 199)
Bernoulli_diff_stat(2000, 5000, 100, 199, 0.1)
Bernoulli_diff_stat(100, 200, 2000, 5000)

# sigr adjusts experiment sizes when lengths
# don't divide into each other.
Bernoulli_diff_stat(100, 199, 2000, 5000)
Bernoulli_diff_stat(100, 199, 2000, 5000)$pValue
```

`calcAUC` *calculate AUC.*

Description

Based on: `http://blog.revolutionanalytics.com/2016/08/roc-curves-in-two-lines-of-code.html`

Usage

```
calcAUC(modelPredictions, yValues, ..., na.rm = FALSE, yTarget = TRUE)
```

Arguments

`modelPredictions`	numeric predictions (not empty)
`yValues`	truth values (not empty, same length as model predictions)
`...`	force later arguments to bind by name.
`na.rm`	logical, if TRUE remove NA values.
`yTarget`	value considered to be positive.

Value

area under curve

Examples

```
sigr::calcAUC(1:4,c(TRUE,FALSE,TRUE,TRUE)) # should be 2/3
```

---

calcDeviance *Calculate deviance.*

Description

Calculate deviance.

Usage

```
calcDeviance(pred, y, na.rm = FALSE, eps = 1e-06)
```

Arguments

pred	numeric predictions
y	logical truth
na.rm	logical, if TRUE remove NA values
eps	numeric, smoothing term

Value

deviance

Examples

```
sigr::calcDeviance(1:4,c(TRUE,FALSE,TRUE,TRUE))
```

calcSSE *Calculate sum of squared error.*

Description

Calculate sum of squared error.

Usage

```
calcSSE(pred, y, na.rm = FALSE)
```

Arguments

pred	numeric predictions
y	numeric truth
na.rm	logical, if TRUE remove NA values

Value

sum of squared error

Examples

```
sigr::calcSSE(1:4,c(1,0,1,1))
```

estimateDifferenceZeroCrossing *Studentized estimate of how often a difference is below zero.*

Description

Studentized estimate of how often a difference is below zero.

Usage

```
estimateDifferenceZeroCrossing(resampledDiffs, na.rm = FALSE)
```

Arguments

resampledDiffs	numeric vector resampled observations
na.rm	logical, if TRUE remove NA values

Value

estimated probability of seeing a re-sampled difference below zero.

Examples

```
set.seed(2352)
resampledDiffs <- rnorm(10)+1
estimateDifferenceZeroCrossing(resampledDiffs)
```

`format.sigr_statistic` *Format*

Description

Format

Usage

```
## S3 method for class 'sigr_statistic'
format(x, ...)
```

Arguments

`x`	sigr wrapper to print
`...`	extra arguments for sigr::render

Value

formatted string

Examples

```
format(wrapSignificance(1/300))
```

getRenderingFormat *Detect rendering format (using knitr).*

Description

Detect rendering format (using knitr).

Usage

```
getRenderingFormat()
```

Value

rendering format

Examples

```
getRenderingFormat()
```

permTestAUC *Perform AUC permutation test.*

Description

Estimate significance of AUC by permutation test.

Usage

```
permTestAUC(d, modelName, yName, yTarget = TRUE, ..., na.rm = FALSE,
  returnScores = FALSE, nrep = 100, parallelCluster = NULL)
```

Arguments

d	data.frame
modelName	character model column name
yName	character outcome column name
yTarget	target to match to y
...	extra arguments (not used)
na.rm	logical, if TRUE remove NA values
returnScores	logical if TRUE return detailed permutedScores
nrep	number of permutation repetitions to estimate p values.
parallelCluster	(optional) a cluster object created by package parallel or package snow

Value

AUC statistic

Examples

```
set.seed(25325)
d <- data.frame(x1=c(1,2,3,4,5,6,7,7),
                y=c(FALSE,TRUE,FALSE,FALSE,
                    TRUE,TRUE,FALSE,TRUE))
permTestAUC(d,'x1','y',TRUE)
```

---

permutationScoreModel

Empirical permutation test of significance of scoreFn(modelValues,yValues) >= scoreFn(modelValues,perm(yValues)).

Description

Treat permutation re-samples as similar to bootstrap replications.

Usage

```
permutationScoreModel(modelValues, yValues, scoreFn, ..., na.rm = FALSE,
  returnScores = FALSE, nRep = 100, parallelCluster = NULL)
```

Arguments

`modelValues`	numeric array of predictions.
`yValues`	numeric/logical array of outcomes, dependent, or truth values
`scoreFn`	function with signature scoreFn(modelValues,yValues) returning scalar numeric score.
`...`	not used, forces later arguments to be bound by name
`na.rm`	logical, if TRUE remove NA values
`returnScores`	logical if TRUE return detailed permutedScores
`nRep`	integer number of repititions to perform
`parallelCluster`	optional snow-style parallel cluster.

Value

summaries

Examples

```
set.seed(25325)
y <- 1:5
m <- c(1,1,2,2,2)
cor.test(m,y,alternative='greater')
f <- function(modelValues,yValues) cor(modelValues,yValues)
permutationScoreModel(m,y,f)
```

`print.sigr_statistic` *Print*

Description

Print

Usage

```
## S3 method for class 'sigr_statistic'
print(x, ...)
```

Arguments

`x`	sigr wrapper to print
`...`	extra arguments for sigr::render and print

Value

formatted string

Examples

```
print(wrapSignificance(1/300))
```

`render` *Format summary roughly in "APA Style" (American Psychological Association).*

Description

Format summary roughly in "APA Style" (American Psychological Association).

Usage

```
render(statistic, ..., format, statDigits = 4, sigDigits = 4,
  pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	sigr summary statistic
`...`	extra arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

See Also

`render.sigr_significance`, `render.sigr_ftest`

`render.sigr_aucpairtest` *Format an AUC-test (quality of a probability score)*

Description

Format an AUC-test (quality of a probability score)

Usage

```
## S3 method for class 'sigr_aucpairtest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped AUC test
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

`render.sigr_aucpermtest` *Format an AUC-test (quality of a probability score)*

Description

Format an AUC-test (quality of a probability score)

Usage

```
## S3 method for class 'sigr_aucpermtest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped AUC test
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

`render.sigr_aucresamptest` *Format an AUC-test (quality of a probability score)*

Description

Format an AUC-test (quality of a probability score)

Usage

```
## S3 method for class 'sigr_aucresamptest'
render(statistic, ..., format,
  statDigits = 4, sigDigits = 4, pLargeCutoff = 0.05,
  pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped AUC test
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

`render.sigr_Bernoulli_diff_test` *Format sigr_Bernoulli_diff_test (test of difference of Bernoulli processes).*

Description

Format sigr_Bernoulli_diff_test (test of difference of Bernoulli processes).

Usage

```
## S3 method for class 'sigr_Bernoulli_diff_test'
render(statistic, ..., format,
  statDigits = 4, sigDigits = 4, pLargeCutoff = 0.05,
  pSmallCutoff = 1e-05)
```

Arguments

statistic	wrapped cor.test.
...	extra arguments (not used)
format	if set the format to return ("html", "latex", "markdown", "ascii", "docx", ...)
statDigits	integer number of digits to show in summaries.
sigDigits	integer number of digits to show in significances.
pLargeCutoff	value to declare non-significance at or above.
pSmallCutoff	smallest value to print

Value

formatted string

Examples

```
Bernoulli_diff_stat(2000, 5000, 100, 200)
Bernoulli_diff_stat(2000, 5000, 100, 200, 0.1)
Bernoulli_diff_stat(2000, 5000, 100, 199)
Bernoulli_diff_stat(2000, 5000, 100, 199, 0.1)
```

---

render.sigr_binomtest

Format binom.test (test of rate of a Binomial/Bernoulli experiment).

Description

Format binom.test (test of rate of a Binomial/Bernoulli experiment).

Usage

```
## S3 method for class 'sigr_binomtest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

statistic	wrapped binom.test.
...	extra arguments (not used)
format	if set the format to return ("html", "latex", "markdown", "ascii", "docx", ...)
statDigits	integer number of digits to show in summaries.
sigDigits	integer number of digits to show in significances.
pLargeCutoff	value to declare non-significance at or above.
pSmallCutoff	smallest value to print

Value

formatted string

Examples

```
bt <- binom.test(7, 10, 0.5)
wrapBinomTest(bt)
```

---

render.sigr_chisqtest

Format a chi-square test (quality of categorical prediction)

Description

Format a chi-square test (quality of categorical prediction)

Usage

```
## S3 method for class 'sigr_chisqtest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped T-test
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

`render.sigr_cohend` *Format Cohen-D (effect size between groups)*

Description

Format Cohen-D (effect size between groups)

Usage

```
## S3 method for class 'sigr_cohend'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 1, pSmallCutoff = 0)
```

Arguments

`statistic`	CohenD-approximation
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

`render.sigr_cortest`
Format cor.test (test of liner correlation).

Description

Format cor.test (test of liner correlation).

Usage

```
## S3 method for class 'sigr_cortest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

statistic	wrapped cor.test.
...	extra arguments (not used)
format	if set the format to return ("html", "latex", "markdown", "ascii", "docx", ...)
statDigits	integer number of digits to show in summaries.
sigDigits	integer number of digits to show in significances.
pLargeCutoff	value to declare non-significance at or above.
pSmallCutoff	smallest value to print

Value

formatted string

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
                y=c(1,1,2,2,3,3,4,4))
ct <- cor.test(d$x,d$y)
wrapCorTest(ct)
```

---

render.sigr_emptest

Format an empirical test (quality of categorical prediction)

Description

Format an empirical test (quality of categorical prediction)

Usage

```
## S3 method for class 'sigr_emptest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

statistic	wrapped T-test
...	not used, force use of named binding for later arguments
format	if set the format to return ("html", "latex", "markdown", "ascii")
statDigits	integer number of digits to show in summaries.
sigDigits	integer number of digits to show in significances.
pLargeCutoff	value to declare non-significance at or above.
pSmallCutoff	smallest value to print

Value

formatted string

`render.sigr_fishertest` *Format fisher.test (test of categorical independence).*

Description

Format fisher.test (test of categorical independence).

Usage

```
## S3 method for class 'sigr_fishertest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped Fisher test
`...`	extra arguments (not used)
`format`	if set the format to return ("html", "latex", "markdown", "ascii", "docx", ...)
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string and fields

Examples

```
d <- data.frame(x=c('b','a','a','a','b','b','b'),
                y=c('1','1','1','2','2','2','2'))
ft <- fisher.test(table(d))
wrapFisherTest(ft)
```

`render.sigr_ftest` *Format an F-test*

Description

Format an F-test

Usage

```
## S3 method for class 'sigr_ftest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped test
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

`render.sigr_permtest`
Format an empirical test (quality of categorical prediction)

Description

Format an empirical test (quality of categorical prediction)

Usage

```
## S3 method for class 'sigr_permtest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped T-test
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summary.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

`render.sigr_pwr_htest` *Format a pwr-test*

Description

Format a pwr-test

Usage

```
## S3 method for class 'sigr_pwr_htest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 1, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped test from pwr package
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

`render.sigr_significance` *Format a significance*

Description

Format a significance

Usage

```
## S3 method for class 'sigr_significance'
render(statistic, ..., format,
  statDigits = 4, sigDigits = 4, pLargeCutoff = 0.05,
  pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped significance
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries (not used in significance reports).
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

Examples

```
cat(render(wrapSignificance(1/300),format='html'))
```

`render.sigr_tinterval` *Format a Student-T tolerance-style interval around an estimate of a mean.*

Description

Report sample size (n), sample mean, bias-corrected standard deviation estimate (assuming normality, using a chi-square distribution correction from `https://en.wikipedia.org/wiki/Unbiased_estimation_of_standard_deviation#Bias_correction`), and a Student t-test tolerance-style confidence interval.

Usage

```
## S3 method for class 'sigr_tinterval'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped TInterval.
`...`	extra arguments (not used)
`format`	if set the format to return ("html", "latex", "markdown", "ascii", "docx", ...)
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

Examples

```
set.seed(2018)
d <- rnorm(100) + 3.2
TInterval(d)
```

`render.sigr_ttest` *Format a T-test (difference in means by group)*

Description

Format a T-test (difference in means by group)

Usage

```
## S3 method for class 'sigr_ttest'
render(statistic, ..., format, statDigits = 4,
  sigDigits = 4, pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

`statistic`	wrapped T-test
`...`	not used, force use of named binding for later arguments
`format`	if set the format to return ("html", "latex", "markdown", "ascii")
`statDigits`	integer number of digits to show in summaries.
`sigDigits`	integer number of digits to show in significances.
`pLargeCutoff`	value to declare non-significance at or above.
`pSmallCutoff`	smallest value to print

Value

formatted string

`resampleScoreModel` *Studentized bootstrap variance estimate for scoreFn(yValues,modelValues).*

Description

Studentized bootstrap variance estimate for scoreFn(yValues,modelValues).

Usage

```
resampleScoreModel(modelValues, yValues, scoreFn, ..., na.rm = FALSE,
  returnScores = FALSE, nRep = 100, parallelCluster = NULL)
```

Arguments

modelValues	numeric array of predictions (model to test).
yValues	numeric/logical array of outcomes, dependent, or truth values
scoreFn	function with signature scoreFn(modelValues,yValues) returning scalar numeric score.
...	not used, forces later arguments to be bound by name
na.rm	logical, if TRUE remove NA values
returnScores	logical if TRUE return detailed resampledScores
nRep	integer number of repititions to perform
parallelCluster	optional snow-style parallel cluster.

Value

summaries

Examples

```
set.seed(25325)
y <- 1:5
m1 <- c(1,1,2,2,2)
cor.test(m1,y,alternative='greater')
f <- function(modelValues,yValues) {
 if((sd(modelValues)<=0)||(sd(yValues)<=0)) {
   return(0)
 }
 cor(modelValues,yValues)
}
s <- sigr::resampleScoreModel(m1,y,f)
print(s)
z <- (s$observedScore-0)/s$sd # should check size of z relative to bias!
pValue <- pt(z,df=length(y)-2,lower.tail=FALSE)
pValue
```

---

resampleScoreModelPair

Studentized bootstrap test of strength of scoreFn(yValues,model1Values) > scoreFn(yValues,model1Values).

Description

Studentized bootstrap test of strength of scoreFn(yValues,model1Values) > scoreFn(yValues,model1Values) sampled with replacement.

Usage

```
resampleScoreModelPair(model1Values, model2Values, yValues, scoreFn, ...,
  na.rm = FALSE, returnScores = FALSE, nRep = 100,
  parallelCluster = NULL, sameSample = FALSE)
```

Arguments

model1Values	numeric array of predictions (model to test).
model2Values	numeric array of predictions (reference model).
yValues	numeric/logical array of outcomes, dependent, or truth values
scoreFn	function with signature scoreFn(modelValues,yValues) returning scalar numeric score.
...	not used, forces later arguments to be bound by name.
na.rm	logical, if TRUE remove NA values
returnScores	logical if TRUE return detailed resampledScores.
nRep	integer number of repititions to perform.
parallelCluster	optional snow-style parallel cluster.
sameSample	logical if TRUE use the same sample in computing both scores during bootstrap replication (else use independent samples).

Details

True confidence intervals are harder to get right (see "An Introduction to the Bootstrap", Bradely Efron, and Robert J. Tibshirani, Chapman & Hall/CRC, 1993.), but we will settle for simple p-value estimates.

Value

summaries

Examples

```
set.seed(25325)
y <- 1:5
m1 <- c(1,1,2,2,2)
m2 <- c(1,1,1,1,2)
cor(m1,y)
cor(m2,y)
f <- function(modelValues,yValues) {
  if((sd(modelValues)<=0)||(sd(yValues)<=0)) {
    return(0)
  }
  cor(modelValues,yValues)
}
resampleScoreModelPair(m1,m2,y,f)
```

`resampleTestAUC` *Wrap AUC resampling test results.*

Description

Estimate significance of AUC by resampling test.

Usage

```
resampleTestAUC(d, modelName, yName, yTarget = TRUE, ...,
  na.rm = FALSE, returnScores = FALSE, nrep = 100,
  parallelCluster = NULL)
```

Arguments

`d`	data.frame
`modelName`	character model column name
`yName`	character outcome column name
`yTarget`	target to match to y
`...`	extra arguments (not used)
`na.rm`	logical, if TRUE remove NA values
`returnScores`	logical if TRUE return detailed resampledScores.
`nrep`	number of permutation repetitions to estimate p values.
`parallelCluster`	(optional) a cluster object created by package parallel or package snow.

Value

AUC statistic

Examples

```
set.seed(25325)
d <- data.frame(x1=c(1,2,3,4,5,6,7,7),
                y=c(FALSE,TRUE,FALSE,FALSE,
                    TRUE,TRUE,FALSE,TRUE))
resampleTestAUC(d,'x1','y',TRUE)
```

`run_sigr_tests` *Run sigr package tests.*

Description

For all files with names of the form "^test_.+\.R$" in the package directory unit_tests run all functions with names of the form "^test_.+$" as RUnit tests. Attaches RUnit and pkg, requires RUnit. Stops on error.

Usage

```
run_sigr_tests(..., verbose = TRUE, package_test_dirs = "unit_tests",
  test_dirs = character(0), stop_on_issue = TRUE,
  stop_if_no_tests = TRUE, require_RUnit_attached = FALSE,
  require_pkg_attached = TRUE, rngKind = "Mersenne-Twister",
  rngNormalKind = "Inversion")
```

Arguments

`...`	not used, force later arguments to bind by name.
`verbose`	logical, if TRUE print more.
`package_test_dirs`	directory names to look for in the installed package.
`test_dirs`	paths to look for tests in.
`stop_on_issue`	logical, if TRUE stop after errors or failures.
`stop_if_no_tests`	logical, if TRUE stop if no tests were found.
`require_RUnit_attached`	logical, if TRUE require RUnit be attached before testing.
`require_pkg_attached`	logical, if TRUE require pkg be attached before testing.
`rngKind`	pseudo-random number generator method name.
`rngNormalKind`	pseudo-random normal generator method name.

Details

Based on `https://github.com/RcppCore/Rcpp/blob/master/tests/doRUnit.R`. This version is GPL-3, works derived from it must be distributed GPL-3.

Value

RUnit test results (invisible).

`sigr` *sigr: Format Significance Summaries for Reports*

Description

Succinctly format significance summaries of various models and tests (F-test, Chi-Sq-test, Fisher-test, T-test, and rank-significance). The main purpose is unified reporting and planning of experimental results, working around issue such as the difficulty of extracting model summary facts (such as with 'lm'/'glm'). This package also includes empirical tests, such as bootstrap estimates.

Details

To learn more about sigr, please start with the vignette: `vignette('sigrFormatting','sigr')`

`testAUCpair` *Test AUC pair results.*

Description

Estimate significance of difference in two AUCs by resampling.

Usage

```
testAUCpair(d, model1Name, model2Name, yName, yTarget = TRUE, ...,
  na.rm = FALSE, returnScores = FALSE, nrep = 100,
  parallelCluster = NULL)
```

Arguments

`d`	data.frame
`model1Name`	character model 1 column name
`model2Name`	character model 2 column name
`yName`	character outcome column name
`yTarget`	target to match to y
`...`	extra arguments (not used)
`na.rm`	logical, if TRUE remove NA values
`returnScores`	logical if TRUE return detailed resampledScores
`nrep`	number of re-sample repetition to estimate p value.
`parallelCluster`	(optional) a cluster object created by package parallel or package snow

Value

AUC pair test

Examples

```
set.seed(25325)
d <- data.frame(x1=c(1,2,3,4,5,6,7,7),
                x2=1,
                y=c(FALSE,TRUE,FALSE,FALSE,
                    TRUE,TRUE,FALSE,TRUE))
testAUCpair(d,'x1','x2','y',TRUE)
```

TInterval *Wrap TInterval (test of Binomial/Bernoulli rate).*

Description

Wrap TInterval (test of Binomial/Bernoulli rate).

Usage

```
TInterval(x, ...)
```

Arguments

x	numeric, data.frame or test.
...	extra arguments

See Also

TIntervalS, TInterval.numeric, TInterval.data.frame

TInterval.data.frame *Student-T tolerance-style interval around an estimate of a mean from a data.frame.*

Description

Student-T tolerance-style interval around an estimate of a mean from a data.frame.

Usage

```
## S3 method for class 'data.frame'
TInterval(x, ColumnName, ..., conf.level = 0.95,
  na.rm = FALSE)
```

Arguments

x	data.frame
ColumnName	character name of measurment column
...	extra arguments passed to TInterval
conf.level	confidence level to draw interval
na.rm	logical, if TRUE remove NA values

Value

wrapped stat

See Also

TInterval, TIntervalS, TInterval.numeric, TInterval.data.frame

Examples

```
set.seed(2018)
d <- data.frame(x = rnorm(100) + 3.2)
TInterval(d, "x")
```

TInterval.numeric *Student-T tolerance-style interval around an estimate of a mean from observations.*

Description

Student-T tolerance-style interval around an estimate of a mean from observations.

Usage

```
## S3 method for class 'numeric'
TInterval(x, ..., conf.level = 0.95, na.rm = FALSE)
```

Arguments

x	logical, vector of observations.
...	extra arguments passed to TInterval
conf.level	confidence level to draw interval
na.rm	logical, if TRUE remove NA values

Value

wrapped stat

See Also

TInterval, TIntervalS, TInterval.numeric, TInterval.data.frame

Examples

```
set.seed(2018)
d <- rnorm(100) + 3.2
TInterval(d)
```

TIntervalS *Student-T tolerance-style interval around an estimate of a mean from summary.*

Description

Student-T tolerance-style interval around an estimate of a mean from summary.

Usage

```
TIntervalS(sample_size, sample_mean, sample_var, ..., nNA = 0,
  conf.level = 0.95)
```

Arguments

sample_size	numeric scalar integer, size of sample.
sample_mean	numeric scalar, mean of sample.
sample_var	numeric scalar, variance of sample (Bessel-corrected).
...	extra arguments passed to TInterval.
nNA	number of NAs seen.
conf.level	confidence level to draw interval

Value

wrapped stat

See Also

TInterval, TIntervalS, TInterval.numeric, TInterval.data.frame

Examples

```
set.seed(2018)
d <- rnorm(100) + 3.2
TIntervalS(length(d), mean(d), stats::var(d))
```

wrapBinomTest *Wrap binom.test (test of Binomial/Bernoulli rate).*

Description

Wrap binom.test (test of Binomial/Bernoulli rate).

Usage

```
wrapBinomTest(x, ...)
```

Arguments

x	numeric, data.frame or test.
...	extra arguments

See Also

wrapBinomTest.htest, wrapBinomTestS, wrapBinomTest.logical, wrapBinomTest.numeric, wrapBinomTest.data.frame

wrapBinomTest.data.frame *Wrap binom.test (test of Binomial/Bernoulli rate).*

Description

Wrap binom.test (test of Binomial/Bernoulli rate).

Usage

```
## S3 method for class 'data.frame'
wrapBinomTest(x, ColumnName, SuccessValue = TRUE,
  ..., p = NA, alternative = c("two.sided", "less", "greater"),
  conf.level = 0.95, na.rm = FALSE)
```

Arguments

x	data.frame
ColumnName	character name of measurment column
SuccessValue	value considered a success (positive)
...	extra arguments passed to binom.test
p	number, hypothesized probability of success.
alternative	passed to binom.test
conf.level	passed to binom.test
na.rm	logical, if TRUE remove NA values

Value

wrapped stat

See Also

wrapBinomTest, wrapBinomTest.htest, wrapBinomTestS, wrapBinomTest.logical, wrapBinomTest.numeric, wrapBinomTest.data.frame

Examples

```
d <- data.frame(x = c(rep(0, 3), rep(1, 7)))
wrapBinomTest(d, "x", 1, p = 0.5)
d <- data.frame(x = c(rep(0, 15), rep(1, 35)))
wrapBinomTest(d, "x", 1, p = 0.5)
```

---

wrapBinomTest.htest

Wrap binom.test (test of Binomial/Bernoulli rate).

Description

Wrap binom.test (test of Binomial/Bernoulli rate).

Usage

```
## S3 method for class 'htest'
wrapBinomTest(x, ...)
```

Arguments

x	binom.test result
...	not used, just for argument compatibility

Value

wrapped stat

See Also

wrapBinomTest, wrapBinomTest.htest, wrapBinomTestS, wrapBinomTest.logical, wrapBinomTest.numeric, wrapBinomTest.data.frame

Examples

```
bt <- binom.test(7, 10, 0.5)
wrapBinomTest(bt)
```

`wrapBinomTest.logical`
Wrap binom.test (test of Binomial/Bernoulli rate).

Description

Wrap binom.test (test of Binomial/Bernoulli rate).

Usage

```
## S3 method for class 'logical'
wrapBinomTest(x, ..., p = NA,
  alternative = c("two.sided", "less", "greater"), conf.level = 0.95,
  na.rm = FALSE)
```

Arguments

`x`	logical, vector of trials.
`...`	extra arguments passed to binom.test
`p`	number, hypothesized probability of success.
`alternative`	passed to `binom.test`
`conf.level`	passed to `binom.test`
`na.rm`	logical, if TRUE remove NA values

Value

wrapped stat

See Also

`wrapBinomTest`, `wrapBinomTest.htest`, `wrapBinomTestS`, `wrapBinomTest.logical`, `wrapBinomTest.numeric`, `wrapBinomTest.data.frame`

Examples

```
x = c(rep(FALSE, 3), rep(TRUE, 7))
wrapBinomTest(x)
x = c(rep(FALSE, 15), rep(TRUE, 35))
wrapBinomTest(x)
```

`wrapBinomTest.numeric` *Wrap binom.test (test of Binomial/Bernoulli rate).*

Description

Wrap binom.test (test of Binomial/Bernoulli rate).

Usage

```
## S3 method for class 'numeric'
wrapBinomTest(x, SuccessValue = TRUE, ..., p = NA,
  alternative = c("two.sided", "less", "greater"), conf.level = 0.95,
  na.rm = FALSE)
```

Arguments

`x`	numeric, vector of trials.
`SuccessValue`	value considered a success (positive)
`...`	extra arguments passed to binom.test
`p`	number, hypothesized probability of success.
`alternative`	passed to `binom.test`
`conf.level`	passed to `binom.test`
`na.rm`	logical, if TRUE remove NA values

Value

wrapped stat

See Also

`wrapBinomTest`, `wrapBinomTest.htest`, `wrapBinomTestS`, `wrapBinomTest.logical`, `wrapBinomTest.numeric`, `wrapBinomTest.data.frame`

Examples

```
x = c(rep(0, 3), rep(1, 7))
wrapBinomTest(x, 1)
x = c(rep(0, 15), rep(1, 35))
wrapBinomTest(x, 1)
```

`wrapBinomTestS` *Wrap binom.test (test of Binomial/Bernoulli rate) from summary.*

Description

Wrap binom.test (test of Binomial/Bernoulli rate) from summary.

Usage

```
wrapBinomTestS(x, n, ..., p = NA, alternative = c("two.sided", "less",
  "greater"), conf.level = 0.95)
```

Arguments

`x`	numeric scalar, number of successes.
`n`	numeric scalar, number of trials.
`...`	extra arguments passed to binom.test
`p`	number, hypothesized probability of success.
`alternative`	passed to `binom.test`
`conf.level`	passed to `binom.test`

Value

wrapped stat

See Also

`wrapBinomTest`, `wrapBinomTest.htest`, `wrapBinomTestS`, `wrapBinomTest.logical`, `wrapBinomTest.numeric`, `wrapBinomTest.data.frame`

Examples

```
wrapBinomTestS(3, 7, p = 0.5)
wrapBinomTestS(300, 700, p = 0.5)
```

`wrapChiSqTest` *Wrap quality of a categorical prediction roughly in "APA Style" (American Psychological Association).*

Description

Wrap quality of a categorical prediction roughly in "APA Style" (American Psychological Association).

Usage

```
wrapChiSqTest(x, ...)
```

Arguments

`x`	numeric, data.frame or lm where to get model or data to score.
`...`	extra arguments

See Also

`wrapChiSqTestImpl`, `wrapChiSqTest.glm`, and `wrapChiSqTest.data.frame`

`wrapChiSqTest.anova` *Format ChiSqTest from anova of logistic model.*

Description

Format ChiSqTest from anova of logistic model.

Usage

```
## S3 method for class 'anova'
wrapChiSqTest(x, ...)
```

Arguments

`x`	result from stats::anova(stats::glm(family=binomial))
`...`	extra arguments (not used)

Value

list of formatted string and fields

Examples

```
d <- data.frame(x1= c(1,2,3,4,5,6,7,7),
                x2= c(1,0,3,0,5,0,7,0),
                y= c(TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,TRUE,FALSE))
model <- glm(y~x1+x2, data=d, family=binomial)
summary(model)
render(wrapChiSqTest(model),
       pLargeCutoff=1, format='ascii')
anov <- anova(model)
print(anov)
lapply(sigr::wrapChiSqTest(anov),
       function(ti) {
         sigr::render(ti,
                      pLargeCutoff= 1,
                      pSmallCutoff= 0,
                      statDigits=4,
                      sigDigits=4,
                      format='ascii')
       })
```

---

wrapChiSqTest.data.frame

Format ChiSqTest from data.

Description

Format ChiSqTest from data.

Usage

```
## S3 method for class 'data.frame'
wrapChiSqTest(x, predictionColumnName, yColumnName,
  ..., yTarget = TRUE, nParameters = 1, meany = mean(x[[yColumnName]]
  == yTarget), na.rm = FALSE)
```

Arguments

x	data frame containing columns to compare
predictionColumnName	character name of prediction column
yColumnName	character name of column containing dependent variable
...	extra arguments (not used)
yTarget	y value to consider positive
nParameters	number of variables in model
meany	(optional) mean of y
na.rm	logical, if TRUE remove NA values

Value

wrapped test

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
      y=c(TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,TRUE,FALSE))
model <- glm(y~x, data=d, family=binomial)
summary(model)
d$pred <- predict(model,type='response',newdata=d)
render(wrapChiSqTest(d,'pred','y'),pLargeCutoff=1)
```

---

wrapChiSqTest.glm *Format ChiSqTest from model.*

Description

Format ChiSqTest from model.

Usage

```
## S3 method for class 'glm'
wrapChiSqTest(x, ...)
```

Arguments

x	glm logistic regression model (glm(family=binomial))
...	extra arguments (not used)

Value

wrapped test

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
      y=c(TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,TRUE,FALSE))
model <- glm(y~x,data=d,family=binomial)
summary(model)
render(wrapChiSqTest(model),pLargeCutoff=1,format='ascii')
```

`wrapChiSqTest.summary.glm` *Format ChiSqTest from model summary.*

Description

Format ChiSqTest from model summary.

Usage

```
## S3 method for class 'summary.glm'
wrapChiSqTest(x, ...)
```

Arguments

`x`	summary(glm(family=binomial)) object.
`...`	extra arguments (not used)

Value

wrapped test

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
      y=c(TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,TRUE,FALSE))
model <- glm(y~x,data=d,family=binomial)
sum <- summary(model)
render(wrapChiSqTest(sum),pLargeCutoff=1,format='ascii')
```

`wrapChiSqTestImpl` *Format quality of a logistic regression roughly in "APA Style" (American Psychological Association).*

Description

Format quality of a logistic regression roughly in "APA Style" (American Psychological Association).

Usage

```
wrapChiSqTestImpl(df.null, df.residual, null.deviance, deviance)
```

Arguments

df.null	null degrees of freedom.
df.residual	residual degrees of freedom.
null.deviance	null deviance
deviance	residual deviance

Value

wrapped statistic

Examples

```
wrapChiSqTestImpl(df.null=7,df.residual=6,
    null.deviance=11.09035,deviance=10.83726)
```

---

wrapCohenD *Wrap Cohen's D (effect size between groups).*

Description

Wrap Cohen's D (effect size between groups).

Usage

```
wrapCohenD(x, ...)
```

Arguments

x	numeric, data.frame or test.
...	extra arguments

See Also

wrapCohenD.data.frame

wrapCohenD.data.frame *Wrap Cohen's D (effect size between groups).*

Description

Wrap Cohen's D (effect size between groups).

Usage

```
## S3 method for class 'data.frame'
wrapCohenD(x, Column1Name, Column2Name, ...,
  na.rm = FALSE)
```

Arguments

x	data.frame
Column1Name	character column 1 name
Column2Name	character column 2 name
...	extra arguments (not used)
na.rm	if TRUE remove NAs

Value

formatted string and fields

Examples

```
d <- data.frame(x = c(1,1,2,2,3,3,4,4),
                y = c(1,2,3,4,5,6,7,7))
render(wrapCohenD(d,'x','y'))
```

wrapCohenD.numeric *Wrap Cohen's D (effect size between groups).*

Description

Wrap Cohen's D (effect size between groups).

Usage

```
## S3 method for class 'numeric'
wrapCohenD(x, treatment, ..., na.rm = FALSE)
```

Arguments

x	numeric reference or control measurements
treatment	numeric treatment or group-2 measurements
...	extra arguments (not used)
na.rm	if TRUE remove NAs

Value

formatted string and fields

Examples

```
d <- data.frame(x = c(1,1,2,2,3,3,4,4),
                y = c(1,2,3,4,5,6,7,7))
render(wrapCohenD(d$x, d$y))
```

---

wrapCorTest *Wrap cor.test (test of liner correlation).*

Description

Wrap cor.test (test of liner correlation).

Usage

```
wrapCorTest(x, ...)
```

Arguments

x	numeric, data.frame or test.
...	extra arguments

See Also

wrapCorTest.htest, and wrapCorTest.data.frame

`wrapCorTest.data.frame` *Wrap cor.test (test of liner correlation).*

Description

Wrap cor.test (test of liner correlation).

Usage

```
## S3 method for class 'data.frame'
wrapCorTest(x, Column1Name, Column2Name, ...,
  alternative = c("two.sided", "less", "greater"),
  method = c("pearson", "kendall", "spearman"), exact = NULL,
  conf.level = 0.95, continuity = FALSE, na.rm = FALSE)
```

Arguments

`x`	data.frame
`Column1Name`	character column 1 name
`Column2Name`	character column 2 name
`...`	extra arguments passed to cor.test
`alternative`	passed to `cor.test`
`method`	passed to `cor.test`
`exact`	passed to `cor.test`
`conf.level`	passed to `cor.test`
`continuity`	passed to `cor.test`
`na.rm`	logical, if TRUE remove NA values

Value

wrapped stat

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
                y=c(1,1,2,2,3,3,4,4))
wrapCorTest(d,'x','y')
```

wrapCorTest.htest *Wrap cor.test (test of liner correlation).*

Description

Wrap cor.test (test of liner correlation).

Usage

```
## S3 method for class 'htest'
wrapCorTest(x, ...)
```

Arguments

x	cor.test result
...	extra arguments (not used)

Value

wrapped stat

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
                y=c(1,1,2,2,3,3,4,4))
ct <- cor.test(d$x,d$y)
wrapCorTest(ct)
```

wrapFisherTest *Wrap fisher.test (test of categorical independence).*

Description

Wrap fisher.test (test of categorical independence).

Usage

```
wrapFisherTest(x, ...)
```

Arguments

x	numeric, data.frame or test.
...	extra arguments

See Also

wrapFisherTest.htest, and wrapFisherTest.data.frame

---

wrapFisherTest.data.frame

Wrap fisher.test (test of categorical independence).

Description

Wrap fisher.test (test of categorical independence).

Usage

```
## S3 method for class 'data.frame'
wrapFisherTest(x, Column1Name, Column2Name, ...,
  na.rm = FALSE, workspace = 2e+05, hybrid = FALSE,
  control = list(), or = 1, alternative = "two.sided",
  conf.int = TRUE, conf.level = 0.95, simulate.p.value = FALSE,
  B = 2000)
```

Arguments

x	data.frame
Column1Name	character column 1 name
Column2Name	character column 2 name
...	extra arguments (not used)
na.rm	logical, if TRUE remove NA values
workspace	passed to fisher.test
hybrid	passed to fisher.test
control	passed to fisher.test
or	passed to fisher.test
alternative	passed to fisher.test
conf.int	passed to fisher.test
conf.level	passed to fisher.test
simulate.p.value	passed to fisher.test
B	passed to fisher.test

Value

wrapped test.

Examples

```
d <- data.frame(x=c('b','a','a','a','b','b','b'),
                y=c('1','1','1','2','2','2','2'))
wrapFisherTest(d, 'x', 'y')
```

`wrapFisherTest.htest` *Wrap fisher.test (test of categorical independence).*

Description

Wrap fisher.test (test of categorical independence).

Usage

```
## S3 method for class 'htest'
wrapFisherTest(x, ...)
```

Arguments

`x`	fisher.test result
`...`	extra arguments (not used)

Value

wrapped test.

Examples

```
d <- data.frame(x=c('b','a','a','a','b','b','b'),
                y=c('1','1','1','2','2','2','2'))
ft <- fisher.test(table(d))
wrapFisherTest(ft)
```

`wrapFisherTest.table` *Wrap fisher.test (test of categorical independence).*

Description

Wrap fisher.test (test of categorical independence).

Usage

```
## S3 method for class 'table'
wrapFisherTest(x, ..., workspace = 2e+05,
  hybrid = FALSE, control = list(), or = 1,
  alternative = "two.sided", conf.int = TRUE, conf.level = 0.95,
  simulate.p.value = FALSE, B = 2000)
```

Arguments

`x`	data.frame
`...`	extra arguments (not used)
`workspace`	passed to `fisher.test`
`hybrid`	passed to `fisher.test`
`control`	passed to `fisher.test`
`or`	passed to `fisher.test`
`alternative`	passed to `fisher.test`
`conf.int`	passed to `fisher.test`
`conf.level`	passed to `fisher.test`
`simulate.p.value`	passed to `fisher.test`
`B`	passed to `fisher.test`

Value

wrapped test.

Examples

```
d <- data.frame(x=c('b','a','a','a','b','b','b'),
                y=c('1','1','1','2','2','2','2'))
t <- table(d)
wrapFisherTest(t)
```

wrapFTest *Wrap F-test (significance identity relation).*

Description

Wrap F-test (significance identity relation).

Usage

```
wrapFTest(x, ...)
```

Arguments

x	numeric, data.frame or lm where to get model or data to score.
...	extra arguments

See Also

wrapFTestImpl, wrapFTest.lm, and wrapFTest.data.frame

wrapFTest.anova *Wrap quality statistic of a linear relation from anova.*

Description

Wrap quality statistic of a linear relation from anova.

Usage

```
## S3 method for class 'anova'
wrapFTest(x, ...)
```

Arguments

x	result from stats::anova(stats::lm())
...	extra arguments (not used)

Value

list of formatted string and fields

Examples

```
d <- data.frame(x1 = c(1,2,3,4,5,6,7,7),
                x2 = c(1,0,3,0,5,6,0,7),
                y =  c(1,1,2,2,3,3,4,4))
model <- lm(y~x1+x2, data=d)
summary(model)
sigr::wrapFTest(model)
anov <- stats::anova(model)
print(anov)
lapply(sigr::wrapFTest(anov),
       function(ti) {
         sigr::render(ti,
                      pLargeCutoff= 1,
                      pSmallCutoff= 0,
                      statDigits=4,
                      sigDigits=4,
                      format='ascii')
       })
```

---

wrapFTest.data.frame

Wrap quality statistic of identity relation from data.

Description

Wrap quality statistic of identity relation from data.

Usage

```
## S3 method for class 'data.frame'
wrapFTest(x, predictionColumnName, yColumnName,
  nParameters = 1, meany = mean(x[[yColumnName]]), ...,
  na.rm = FALSE, format = NULL, pLargeCutoff = 0.05,
  pSmallCutoff = 1e-05)
```

Arguments

x	data frame containing columns to compare
predictionColumnName	character name of prediction column
yColumnName	character name of column containing dependent variable
nParameters	number of variables in model
meany	(optional) mean of y
...	extra arguments (not used)

na.rm	logical, if TRUE remove NA values
format	if set the format to return ("html", "latex", "markdown", "ascii", "docx")
pLargeCutoff	value to declare non-significance at or above.
pSmallCutoff	smallest value to print

Value

formatted string and fields

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
                y=c(1,1,2,2,3,3,4,4))
model <- lm(y~x,data=d)
summary(model)
d$pred <- predict(model,newdata=d)
sigr::wrapFTest(d,'pred','y')
```

---

wrapFTest.lm *Wrap quality statistic of identity r regression.*

Description

Wrap quality statistic of identity r regression.

Usage

```
## S3 method for class 'lm'
wrapFTest(x, ..., format = NULL, pLargeCutoff = 0.05,
  pSmallCutoff = 1e-05)
```

Arguments

x	lm model
...	extra arguments (not used)
format	if set the format to return ("html", "latex", "markdown", "ascii", "docx", ...)
pLargeCutoff	value to declare non-significance at or above.
pSmallCutoff	smallest value to print

Value

formatted string

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
                y=c(1,1,2,2,3,3,4,4))
model <- lm(y~x,data=d)
summary(model)
sigr::wrapFTest(model)
```

---

wrapFTest.summary.lm

Wrap quality statistic of linear regression summary.

Description

Wrap quality statistic of linear regression summary.

Usage

```
## S3 method for class 'summary.lm'
wrapFTest(x, ..., format = NULL,
  pLargeCutoff = 0.05, pSmallCutoff = 1e-05)
```

Arguments

x	summary.lm summary(lm()) object
...	extra arguments (not used)
format	if set the format to return ("html", "latex", "markdown", "ascii", "docx", ...)
pLargeCutoff	value to declare non-significance at or above.
pSmallCutoff	smallest value to print

Value

formatted string

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
                y=c(1,1,2,2,3,3,4,4))
model <- lm(y~x,data=d)
sum <- summary(model)
sigr::wrapFTest(sum)
```

wrapFTestezANOVA *Wrap quality statistic of a linear relation from ezANOVA (package ez).*

Description

Please see `https://github.com/WinVector/sigr/issues/1#issuecomment-322311947` for an example.

Usage

```
wrapFTestezANOVA(x, ...)
```

Arguments

`x`	list result from ezANOVA (package ez).
`...`	extra arguments (not used)

Value

list of formatted string and fields

wrapFTestImpl *Wrap F-test (significance of identity relation).*

Description

Wrap F-test (significance of identity relation).

Usage

```
wrapFTestImpl(numdf, dendf, FValue, ..., format = NULL)
```

Arguments

`numdf`	degrees of freedom 1.
`dendf`	degrees of freedom 2.
`FValue`	observed F test statistic
`...`	not used, force later arguments to bind by name
`format`	optional, suggested format

Value

wrapped statistic

Examples

```
wrapFTestImpl(numdf=2,dendf=55,FValue=5.56)
```

---

wrapPWR *Wrap pwr test (difference in means by group).*

Description

Wrap pwr test (difference in means by group).

Usage

```
wrapPWR(x, ...)
```

Arguments

x	test from pwr package
...	extra arguments

See Also

```
pwr.2p.test
```

---

wrapPWR.power.htest *Wrap pwr test.*

Description

Wrap pwr test.

Usage

```
## S3 method for class 'power.htest'
wrapPWR(x, ...)
```

Arguments

x	pwr test result
...	extra arguments (not used)

Value

formatted string and fields

Examples

```
if(require("pwr", quietly = TRUE)) {
  # Example from pwr package
  #  Exercise 6.1 p. 198 from Cohen (1988)
  test <- pwr::pwr.2p.test(h=0.3,n=80,sig.level=0.05,alternative="greater")
  wrapPWR(test)
}
```

---

wrapSignificance *Wrap a significance*

Description

Wrap a significance

Usage

```
wrapSignificance(significance, symbol = "p")
```

Arguments

significance	numeric the significance value.
symbol	the name of the value (e.g. "p", "t", ...).

Value

wrapped significance

Examples

```
wrapSignificance(1/300)
```

wrapTTest *Wrap t.test (difference in means by group).*

Description

Wrap t.test (difference in means by group).

Usage

```
wrapTTest(x, ...)
```

Arguments

x	numeric, data.frame or test.
...	extra arguments

See Also

wrapTTest.htest, and wrapTTest.data.frame

wrapTTest.data.frame *Wrap t.test (difference in means by group).*

Description

Wrap t.test (difference in means by group).

Usage

```
## S3 method for class 'data.frame'
wrapTTest(x, Column1Name, Column2Name, ...,
  y = NULL, alternative = c("two.sided", "less", "greater"), mu = 0,
  paired = FALSE, var.equal = FALSE, conf.level = 0.95,
  na.rm = FALSE)
```

Arguments

x	data.frame
Column1Name	character column 1 name
Column2Name	character column 2 name
...	extra arguments passed to ttest
y	passed to t.test
alternative	passed to t.test

mu	passed to t.test
paired	passed to t.test
var.equal	passed to t.test
conf.level	passed to t.test
na.rm	logical, if TRUE remove NA values

Value

formatted string and fields

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
                y=c(1,1,2,2,3,3,4,4))
render(wrapTTest(d,'x','y'),pLargeCutoff=1)
# confirm p not order depedent
render(wrapTTest(d,'y','x'),pLargeCutoff=1)
```

---

wrapTTest.htest *Wrap t.test (difference in means by group).*

Description

Wrap t.test (difference in means by group).

Usage

```
## S3 method for class 'htest'
wrapTTest(x, ...)
```

Arguments

x	t.test result
...	extra arguments (not used)

Value

formatted string and fields

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
                y=c(1,1,2,2,3,3,4,4))
tt <- t.test(d$x,d$y)
render(wrapTTest(tt),pLargeCutoff=1)
# confirm not rescaling, as a correlation test would
render(wrapTTest(t.test(d$x,2*d$y)),pLargeCutoff=1)
```

---

wrapTTest.numeric *Wrap t.test (difference in means by group).*

Description

Wrap t.test (difference in means by group).

Usage

```
## S3 method for class 'numeric'
wrapTTest(x, pop2, ..., y = NULL,
  alternative = c("two.sided", "less", "greater"), mu = 0,
  paired = FALSE, var.equal = FALSE, conf.level = 0.95,
  na.rm = FALSE)
```

Arguments

x	numeric population 1
pop2	numeric population 2
...	extra arguments passed to ttest
y	passed to t.test
alternative	passed to t.test
mu	passed to t.test
paired	passed to t.test
var.equal	passed to t.test
conf.level	passed to t.test
na.rm	logical, if TRUE remove NA values

Value

formatted string and fields

Examples

```
d <- data.frame(x=c(1,2,3,4,5,6,7,7),
                y=c(1,1,2,2,3,3,4,4))
render(wrapTTest(d$x, d$y), pLargeCutoff=1)
# confirm p not order depedent
render(wrapTTest(d$y, d$x),pLargeCutoff=1)
```