Package: gcor (via r-universe)

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Title Generalized Correlation and Related Measures

Version 0.1.0.9000

Depends R (>= 4.0.0)

Description Generalized correlation and related measures for assessing nonlinear relationships between variables, including mixed-type data. For methodological background, see <https://r-suzuki.github.io/gcor/method.html>.

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Encoding UTF-8

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URL https://github.com/r-suzuki/gcor-r

BugReports https://github.com/r-suzuki/gcor-r/issues

Suggests testthat (>= 3.0.0)

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Repository https://r-suzuki.r-universe.dev

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Contents

gcor-package *Estimate generalized correlation and related measures*

Description

Estimate generalized correlation and related measures, which includes:

- Generalized correlation measure (`gcor`)
- Directed generalized correlation measure (`dgcor`)
- Dissimilarity between variables (`gdis`)

Usage

```
gcor(
  x,
  y = NULL,
  data = NULL,
  dropNA = "none",
  k = NULL,
  max_levels = 100,
  simplify = TRUE
)

dgcor(
  x,
  y = NULL,
  data = NULL,
  dropNA = "none",
  k = NULL,
  max_levels = 100,
  simplify = TRUE
)

gdis(x, dropNA = "none", k = NULL, max_levels = 100, ...)
```

Arguments

`x`	a vector, matrix, data frame or formula. If formula, `data` should be specified. `gdis` requires a matrix or data frame.
`y`	`NULL` (default) or a vector, matrix or data frame with compatible dimensions to `x`.
`data`	`NULL` (default) or a data frame. Required if `x` is a formula.
`dropNA`	a character specifying how to handle missing values. It should be one of the following:

"none" (default) Treat missing values as observations of a single categorical value, namely NA. Recommended for reflecting missing patterns in the analysis.

"casewise" Casewise deletion; rows containing any missing value are removed. Similar to use = "complete.obs" in cor.

"pairwise" Pairwise deletion; for any pair of columns (x,y), the i-th row is removed if x[i] or y[i] is missing. This process is applied per pair; the same row is not removed with another pair (w,z), if both w[i] and z[i] are not missing. Similar to use = "pairwise.complete.obs" in cor.

k	NULL (default) or an integer specifying the number of groups for discretization. Numerical data are divided into k groups using k-quantiles. If NULL, it is determined automatically.
max_levels	an integer specifying the maximum number of levels allowed when converting non-numeric variables to factors.
simplify	a logical. If TRUE, the returned value is coerced to a vector when one of its dimensions is one.
...	additional arguments (diag and upper) passed to as.dist function. See as.dist for details.

Value

For gcor and dgcor, a numeric matrix is returned (or a vector if simplify = TRUE). For gdis, an object of class "dist" is returned.

References

Suzuki, R. (2026). *Method Overview of gcor*. https://r-suzuki.github.io/gcor/method.html

Examples

```
# Generalized correlation measure
gcor(iris)

# Dependency of Species on other variables
dgc <- dgcor(Species ~ ., data = iris)
dotchart(sort(dgc), main = "Dependency of Species")

# Clustering
gd <- gdis(iris)
hc <- hclust(gd, method = "ward.D2")
plot(hc)

# Multidimensional scaling
mds <- cmdscale(gd, k = 2)
plot(mds, type = "n", xlab = "", ylab = "", asp = 1, axes = FALSE,
     main = "cmdscale with gdis(iris)")
text(mds[,1], mds[,2], rownames(mds))
```

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