Package 'radiant.model'

October 11, 2024

Type Package

Title Model Menu for Radiant: Business Analytics using R and Shiny

Version 1.6.7

Date 2024-10-7

Description The Radiant Model menu includes interfaces for linear and logistic regression, naive Bayes, neural networks, classification and regression trees, model evaluation, collaborative filtering, decision analysis, and simulation. The application extends the functionality in 'radiant.data'.

Depends R (>= 4.3.0), radiant.data (>= 1.6.6)

Imports radiant.basics (>= 1.6.6), shiny (>= 1.8.1), nnet (>= 7.3.12), NeuralNetTools (>= 1.5.1), sandwich (>= 2.3.4), car (>= 2.1.3), ggplot2 (>= 3.4.2), scales (>= 1.2.1), data.tree (>= 0.7.4), stringr (>= 1.1.0), lubridate (>= 1.7.2), tidyr (>= 0.8.2), dplyr (>= 1.1.2), tidyselect (>= 1.2.0), rlang (>= 0.4.10), magrittr (>= 1.5), DiagrammeR (>= 1.0.9), import (>= 1.1.0), psych (>= 1.8.4), e1071 (>= 1.6.8), rpart (>= 4.1.11), ggrepel (>= 0.8), broom (>= 0.7.0), patchwork (>= 1.0.0), ranger (>= 0.11.2), xgboost (>= 1.6.0.1), pdp (>= 0.8.1), vip (>= 0.3.2), stringi, yaml

Suggests testthat (>= 2.0.0), pkgdown (>= 1.1.0)

URL https://github.com/radiant-rstats/radiant.model/, https://radiant-rstats.github.io/radiant.model/, https://radiant-rstats.github.io/docs/

BugReports https://github.com/radiant-rstats/radiant.model/issues/

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LazyData true

Encoding UTF-8

Language en-US

RoxygenNote 7.3.2

NeedsCompilation no

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Repository CRAN

Date/Publication 2024-10-11 05:50:02 UTC

Contents

`.as_int` *Convenience function used in "simulater"*

Description

Convenience function used in "simulater"

Usage

```
.as_int(x, dataset = list())
```

Arguments

x	Character vector to be converted to integer
dataset	Data list

Value

An integer vector

.as_num *Convenience function used in "simulater"*

Description

Convenience function used in "simulater"

Usage

```
.as_num(x, dataset = list())
```

Arguments

x	Character vector to be converted to an numeric value
dataset	Data list

Value

An numeric vector

---

auc *Area Under the RO Curve (AUC)*

Description

Area Under the RO Curve (AUC)

Usage

```
auc(pred, rvar, lev)
```

Arguments

pred	Prediction or predictor
rvar	Response variable
lev	The level in the response variable defined as success

Details

See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

Value

AUC statistic

See Also

evalbin to calculate results

summary.evalbin to summarize results

plot.evalbin to plot results

Examples

```
auc(runif(20000), dvd$buy, "yes")
auc(ifelse(dvd$buy == "yes", 1, 0), dvd$buy, "yes")
```

---

catalog *Catalog sales for men's and women's apparel*

Description

Catalog sales for men's and women's apparel

Usage

```
data(catalog)
```

Format

A data frame with 200 rows and 5 variables

Details

Description provided in attr(catalog, "description")

confint_robust *Confidence interval for robust estimators*

Description

Confidence interval for robust estimators

Usage

```
confint_robust(object, level = 0.95, dist = "norm", vcov = NULL, ...)
```

Arguments

object	A fitted model object
level	The confidence level required
dist	Distribution to use ("norm" or "t")
vcov	Covariance matrix generated by, e.g., sandwich::vcovHC
...	Additional argument(s) for methods

Details

Wrapper for confint with robust standard errors. See https://stackoverflow.com/questions/3817182/vcovhc-and-confidence-interval/3820125#3820125

confusion *Confusion matrix*

Description

Confusion matrix

Usage

```
confusion(
  dataset,
  pred,
  rvar,
  lev = "",
  cost = 1,
  margin = 2,
  scale = 1,
  train = "All",
  data_filter = "",
  arr = "",
```

```
  rows = NULL,
  envir = parent.frame(),
  ...
)
```

Arguments

dataset	Dataset
pred	Predictions or predictors
rvar	Response variable
lev	The level in the response variable defined as success
cost	Cost for each connection (e.g., email or mailing)
margin	Margin on each customer purchase
scale	Scaling factor to apply to calculations
train	Use data from training ("Training"), test ("Test"), both ("Both"), or all data ("All") to evaluate model evalbin
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from
...	further arguments passed to or from other methods

Details

Confusion matrix and additional metrics to evaluate binary classification models. See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

Value

A list of results

See Also

summary.confusion to summarize results

plot.confusion to plot results

Examples

```
data.frame(buy = dvd$buy, pred1 = runif(20000), pred2 = ifelse(dvd$buy == "yes", 1, 0)) %>%
  confusion(c("pred1", "pred2"), "buy") %>%
  str()
```

crs *Collaborative Filtering*

Description

Collaborative Filtering

Usage

```
crs(
  dataset,
  id,
  prod,
  pred,
  rate,
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

dataset	Dataset
id	String with name of the variable containing user ids
prod	String with name of the variable with product ids
pred	Products to predict for
rate	String with name of the variable with product ratings
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "training == 1")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/model/crs.html for an example in Radiant

Value

A data.frame with the original data and a new column with predicted ratings

See Also

summary.crs to summarize results

plot.crs to plot results if the actual ratings are available

Examples

```
crs(ratings,
  id = "Users", prod = "Movies", pred = c("M6", "M7", "M8", "M9", "M10"),
  rate = "Ratings", data_filter = "training == 1"
) %>% str()
```

---

crtree *Classification and regression trees based on the rpart package*

Description

Classification and regression trees based on the rpart package

Usage

```
crtree(
  dataset,
  rvar,
  evar,
  type = "",
  lev = "",
  wts = "None",
  minsplit = 2,
  minbucket = round(minsplit/3),
  cp = 0.001,
  pcp = NA,
  nodes = NA,
  K = 10,
  seed = 1234,
  split = "gini",
  prior = NA,
  adjprob = TRUE,
  cost = NA,
  margin = NA,
  check = "",
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

dataset	Dataset
rvar	The response variable in the model
evar	Explanatory variables in the model

type	Model type (i.e., "classification" or "regression")
lev	The level in the response variable defined as _success_
wts	Weights to use in estimation
minsplit	The minimum number of observations that must exist in a node in order for a split to be attempted.
minbucket	the minimum number of observations in any terminal <leaf> node. If only one of minbucket or minsplit is specified, the code either sets minsplit to minbucket*3 or minbucket to minsplit/3, as appropriate.
cp	Minimum proportion of root node deviance required for split (default = 0.001)
pcp	Complexity parameter to use for pruning
nodes	Maximum size of tree in number of nodes to return
K	Number of folds use in cross-validation
seed	Random seed used for cross-validation
split	Splitting criterion to use (i.e., "gini" or "information")
prior	Adjust the initial probability for the selected level (e.g., set to .5 in unbalanced samples)
adjprob	Setting a prior will rescale the predicted probabilities. Set adjprob to TRUE to adjust the probabilities back to their original scale after estimation
cost	Cost for each treatment (e.g., mailing)
margin	Margin associated with a successful treatment (e.g., a purchase)
check	Optional estimation parameters (e.g., "standardize")
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/model/crtree.html for an example in Radiant

Value

A list with all variables defined in crtree as an object of class tree

See Also

summary.crtree to summarize results

plot.crtree to plot results

predict.crtree for prediction

Examples

```
crtree(titanic, "survived", c("pclass", "sex"), lev = "Yes") %>% summary()
result <- crtree(titanic, "survived", c("pclass", "sex")) %>% summary()
result <- crtree(diamonds, "price", c("carat", "clarity"), type = "regression") %>% str()
```

cv.crtree *Cross-validation for Classification and Regression Trees*

Description

Cross-validation for Classification and Regression Trees

Usage

```
cv.crtree(
  object,
  K = 5,
  repeats = 1,
  cp,
  pcp = seq(0, 0.01, length.out = 11),
  seed = 1234,
  trace = TRUE,
  fun,
  ...
)
```

Arguments

object	Object of type "rpart" or "crtree" to use as a starting point for cross validation
K	Number of cross validation passes to use
repeats	Number of times to repeat the K cross-validation steps
cp	Complexity parameter used when building the (e.g., 0.0001)
pcp	Complexity parameter to use for pruning
seed	Random seed to use as the starting point
trace	Print progress
fun	Function to use for model evaluation (e.g., auc for classification or RMSE for regression)
...	Additional arguments to be passed to 'fun'

Details

See https://radiant-rstats.github.io/docs/model/crtree.html for an example in Radiant

Value

A data.frame sorted by the mean, sd, min, and max of the performance metric

See Also

crtree to generate an initial model that can be passed to cv.crtree

Rsq to calculate an R-squared measure for a regression

RMSE to calculate the Root Mean Squared Error for a regression

MAE to calculate the Mean Absolute Error for a regression

auc to calculate the area under the ROC curve for classification

profit to calculate profits for classification at a cost/margin threshold

Examples

```
## Not run:
result <- crtree(dvd, "buy", c("coupon", "purch", "last"))
cv.crtree(result, cp = 0.0001, pcp = seq(0, 0.01, length.out = 11))
cv.crtree(result, cp = 0.0001, pcp = c(0, 0.001, 0.002), fun = profit, cost = 1, margin = 5)
result <- crtree(diamonds, "price", c("carat", "color", "clarity"), type = "regression", cp = 0.001)
cv.crtree(result, cp = 0.001, pcp = seq(0, 0.01, length.out = 11), fun = MAE)

## End(Not run)
```

---

cv.gbt *Cross-validation for Gradient Boosted Trees*

Description

Cross-validation for Gradient Boosted Trees

Usage

```
cv.gbt(
  object,
  K = 5,
  repeats = 1,
  params = list(),
  nrounds = 500,
  early_stopping_rounds = 10,
  nthread = 12,
  train = NULL,
  type = "classification",
  trace = TRUE,
  seed = 1234,
  maximize = NULL,
  fun,
  ...
)
```

Arguments

object	Object of type "gbt" or "ranger"
K	Number of cross validation passes to use (aka nfold)
repeats	Repeated cross validation
params	List of parameters (see XGBoost documentation)
nrounds	Number of trees to create
early_stopping_rounds	Early stopping rule
nthread	Number of parallel threads to use. Defaults to 12 if available
train	An optional xgb.DMatrix object containing the original training data. Not needed when using Radiant's gbt function
type	Model type ("classification" or "regression")
trace	Print progress
seed	Random seed to use as the starting point
maximize	When a custom function is used, xgb.cv requires the user indicate if the function output should be maximized (TRUE) or minimized (FALSE)
fun	Function to use for model evaluation (i.e., auc for classification and RMSE for regression)
...	Additional arguments to be passed to 'fun'

Details

See https://radiant-rstats.github.io/docs/model/gbt.html for an example in Radiant

Value

A data.frame sorted by the mean of the performance metric

See Also

gbt to generate an initial model that can be passed to cv.gbt

Rsq to calculate an R-squared measure for a regression

RMSE to calculate the Root Mean Squared Error for a regression

MAE to calculate the Mean Absolute Error for a regression

auc to calculate the area under the ROC curve for classification

profit to calculate profits for classification at a cost/margin threshold

Examples

```
## Not run:
result <- gbt(dvd, "buy", c("coupon", "purch", "last"))
cv.gbt(result, params = list(max_depth = 1:6))
cv.gbt(result, params = list(max_depth = 1:6), fun = "logloss")
cv.gbt(
  result,
  params = list(learning_rate = seq(0.1, 1.0, 0.1)),
  maximize = TRUE, fun = profit, cost = 1, margin = 5
)
result <- gbt(diamonds, "price", c("carat", "color", "clarity"), type = "regression")
cv.gbt(result, params = list(max_depth = 1:2, min_child_weight = 1:2))
cv.gbt(result, params = list(learning_rate = seq(0.1, 0.5, 0.1)), fun = Rsq, maximize = TRUE)
cv.gbt(result, params = list(learning_rate = seq(0.1, 0.5, 0.1)), fun = MAE, maximize = FALSE)

## End(Not run)
```

---

cv.nn *Cross-validation for a Neural Network*

Description

Cross-validation for a Neural Network

Usage

```
cv.nn(
  object,
  K = 5,
  repeats = 1,
  decay = seq(0, 1, 0.2),
  size = 1:5,
  seed = 1234,
  trace = TRUE,
  fun,
  ...
)
```

Arguments

object	Object of type "nn" or "nnet"
K	Number of cross validation passes to use
repeats	Repeated cross validation
decay	Parameter decay
size	Number of units (nodes) in the hidden layer

seed	Random seed to use as the starting point
trace	Print progress
fun	Function to use for model evaluation (i.e., auc for classification and RMSE for regression)
...	Additional arguments to be passed to 'fun'

Details

See https://radiant-rstats.github.io/docs/model/nn.html for an example in Radiant

Value

A data.frame sorted by the mean of the performance metric

See Also

nn to generate an initial model that can be passed to cv.nn

Rsq to calculate an R-squared measure for a regression

RMSE to calculate the Root Mean Squared Error for a regression

MAE to calculate the Mean Absolute Error for a regression

auc to calculate the area under the ROC curve for classification

profit to calculate profits for classification at a cost/margin threshold

Examples

```
## Not run:
result <- nn(dvd, "buy", c("coupon", "purch", "last"))
cv.nn(result, decay = seq(0, 1, .5), size = 1:2)
cv.nn(result, decay = seq(0, 1, .5), size = 1:2, fun = profit, cost = 1, margin = 5)
result <- nn(diamonds, "price", c("carat", "color", "clarity"), type = "regression")
cv.nn(result, decay = seq(0, 1, .5), size = 1:2)
cv.nn(result, decay = seq(0, 1, .5), size = 1:2, fun = Rsq)

## End(Not run)
```

---

cv.rforest *Cross-validation for a Random Forest*

Description

Cross-validation for a Random Forest

Usage

```
cv.rforest(
  object,
  K = 5,
  repeats = 1,
  mtry = 1:5,
  num.trees = NULL,
  min.node.size = 1,
  sample.fraction = NA,
  trace = TRUE,
  seed = 1234,
  fun,
  ...
)
```

Arguments

object	Object of type "rforest" or "ranger"
K	Number of cross validation passes to use
repeats	Repeated cross validation
mtry	Number of variables to possibly split at in each node. Default is the (rounded down) square root of the number variables
num.trees	Number of trees to create
min.node.size	Minimal node size
sample.fraction	Fraction of observations to sample. Default is 1 for sampling with replacement and 0.632 for sampling without replacement
trace	Print progress
seed	Random seed to use as the starting point
fun	Function to use for model evaluation (i.e., auc for classification and RMSE for regression)
...	Additional arguments to be passed to 'fun'

Details

See https://radiant-rstats.github.io/docs/model/rforest.html for an example in Radiant

Value

A data.frame sorted by the mean of the performance metric

See Also

rforest to generate an initial model that can be passed to cv.rforest

Rsq to calculate an R-squared measure for a regression

RMSE to calculate the Root Mean Squared Error for a regression

MAE to calculate the Mean Absolute Error for a regression

auc to calculate the area under the ROC curve for classification

profit to calculate profits for classification at a cost/margin threshold

Examples

```
## Not run:
result <- rforest(dvd, "buy", c("coupon", "purch", "last"))
cv.rforest(
  result,
  mtry = 1:3, min.node.size = seq(1, 10, 5),
  num.trees = c(100, 200), sample.fraction = 0.632
)
result <- rforest(titanic, "survived", c("pclass", "sex"), max.depth = 1)
cv.rforest(result, mtry = 1:3, min.node.size = seq(1, 10, 5))
cv.rforest(result, mtry = 1:3, num.trees = c(100, 200), fun = profit, cost = 1, margin = 5)
result <- rforest(diamonds, "price", c("carat", "color", "clarity"), type = "regression")
cv.rforest(result, mtry = 1:3, min.node.size = 1)
cv.rforest(result, mtry = 1:3, min.node.size = 1, fun = Rsq)

## End(Not run)
```

---

direct_marketing *Direct marketing data*

Description

Direct marketing data

Usage

```
data(direct_marketing)
```

Format

A data frame with 1,000 rows and 12 variables

Details

Description provided in attr(direct_marketing, "description")

dtree *Create a decision tree*

Description

Create a decision tree

Usage

```
dtree(yl, opt = "max", base = character(0), envir = parent.frame())
```

Arguments

yl	A yaml string or a list (e.g., from yaml::yaml.load_file())
opt	Find the maximum ("max") or minimum ("min") value for each decision node
base	List of variable definitions from a base tree used when calling a sub-tree
envir	Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/model/dtree.html for an example in Radiant

Value

A list with the initial tree, the calculated tree, and a data.frame with results (i.e., payoffs, probabilities, etc.)

See Also

summary.dtree to summarize results

plot.dtree to plot results

sensitivity.dtree to plot results

Examples

```
yaml::as.yaml(movie_contract) %>% cat()
dtree(movie_contract, opt = "max") %>% summary(output = TRUE)
dtree(movie_contract)$payoff
dtree(movie_contract)$prob
dtree(movie_contract)$solution_df
```

dtree_parser *Parse yaml input for dtree to provide (more) useful error messages*

Description

Parse yaml input for dtree to provide (more) useful error messages

Usage

```
dtree_parser(yl)
```

Arguments

yl	A yaml string

Details

See https://radiant-rstats.github.io/docs/model/dtree.html for an example in Radiant

Value

An updated yaml string or a vector messages to return to the users

See Also

dtree to calculate tree

summary.dtree to summarize results

plot.dtree to plot results

dvd *Data on DVD sales*

Description

Data on DVD sales

Usage

```
data(dvd)
```

Format

A data frame with 20,000 rows and 4 variables

Details

Binary purchase response to coupon value. Description provided in attr(dvd,"description")

`evalbin` *Evaluate the performance of different (binary) classification models*

Description

Evaluate the performance of different (binary) classification models

Usage

```
evalbin(
  dataset,
  pred,
  rvar,
  lev = "",
  qnt = 10,
  cost = 1,
  margin = 2,
  scale = 1,
  train = "All",
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

`dataset`	Dataset
`pred`	Predictions or predictors
`rvar`	Response variable
`lev`	The level in the response variable defined as success
`qnt`	Number of bins to create
`cost`	Cost for each connection (e.g., email or mailing)
`margin`	Margin on each customer purchase
`scale`	Scaling factor to apply to calculations
`train`	Use data from training ("Training"), test ("Test"), both ("Both"), or all data ("All") to evaluate model evalbin
`data_filter`	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
`arr`	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
`rows`	Rows to select from the specified dataset
`envir`	Environment to extract data from

Details

Evaluate different (binary) classification models based on predictions. See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

Value

A list of results

See Also

summary.evalbin to summarize results

plot.evalbin to plot results

Examples

```
data.frame(buy = dvd$buy, pred1 = runif(20000), pred2 = ifelse(dvd$buy == "yes", 1, 0)) %>%
  evalbin(c("pred1", "pred2"), "buy") %>%
  str()
```

---

evalreg *Evaluate the performance of different regression models*

Description

Evaluate the performance of different regression models

Usage

```
evalreg(
  dataset,
  pred,
  rvar,
  train = "All",
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

dataset	Dataset
pred	Predictions or predictors
rvar	Response variable
train	Use data from training ("Training"), test ("Test"), both ("Both"), or all data ("All") to evaluate model evalreg

data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "training == 1")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from

Details

Evaluate different regression models based on predictions. See https://radiant-rstats.github.io/docs/model/evalreg.html for an example in Radiant

Value

A list of results

See Also

summary.evalreg to summarize results

plot.evalreg to plot results

Examples

```
data.frame(price = diamonds$price, pred1 = rnorm(3000), pred2 = diamonds$price) %>%
  evalreg(pred = c("pred1", "pred2"), "price") %>%
  str()
```

---

find_max *Find maximum value of a vector*

Description

Find maximum value of a vector

Usage

```
find_max(x, y)
```

Arguments

x	Variable to find the maximum for
y	Variable to find the value for at the maximum of var

Details

Find the value of y at the maximum value of x

Value

Value of val at the maximum of var

Examples

```
find_max(1:10, 21:30)
```

`find_min` *Find minimum value of a vector*

Description

Find minimum value of a vector

Usage

```
find_min(x, y)
```

Arguments

x	Variable to find the minimum for
y	Variable to find the value for at the maximum of var

Details

Find the value of y at the minimum value of x

Value

Value of val at the minimum of var

Examples

```
find_min(1:10, 21:30)
```

gbt *Gradient Boosted Trees using XGBoost*

Description

Gradient Boosted Trees using XGBoost

Usage

```
gbt(
  dataset,
  rvar,
  evar,
  type = "classification",
  lev = "",
  max_depth = 6,
  learning_rate = 0.3,
  min_split_loss = 0,
  min_child_weight = 1,
  subsample = 1,
  nrounds = 100,
  early_stopping_rounds = 10,
  nthread = 12,
  wts = "None",
  seed = NA,
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame(),
  ...
)
```

Arguments

dataset	Dataset
rvar	The response variable in the model
evar	Explanatory variables in the model
type	Model type (i.e., "classification" or "regression")
lev	Level to use as the first column in prediction output
max_depth	Maximum 'depth' of tree
learning_rate	Learning rate (eta)
min_split_loss	Minimal improvement (gamma)
min_child_weight	Minimum number of instances allowed in each node

subsample	Subsample ratio of the training instances (0-1)
nrounds	Number of trees to create
early_stopping_rounds	Early stopping rule
nthread	Number of parallel threads to use. Defaults to 12 if available
wts	Weights to use in estimation
seed	Random seed to use as the starting point
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from
...	Further arguments to pass to xgboost

Details

See https://radiant-rstats.github.io/docs/model/gbt.html for an example in Radiant

Value

A list with all variables defined in gbt as an object of class gbt

See Also

summary.gbt to summarize results

plot.gbt to plot results

predict.gbt for prediction

Examples

```
## Not run:
gbt(titanic, "survived", c("pclass", "sex"), lev = "Yes") %>% summary()
gbt(titanic, "survived", c("pclass", "sex")) %>% str()

## End(Not run)
gbt(
  titanic, "survived", c("pclass", "sex"), lev = "Yes",
  early_stopping_rounds = 0, nthread = 1
) %>% summary()
gbt(
  titanic, "survived", c("pclass", "sex"),
  early_stopping_rounds = 0, nthread = 1
) %>% str()
gbt(
  titanic, "survived", c("pclass", "sex"),
  eval_metric = paste0("error@", 0.5 / 6), nthread = 1
) %>% str()
```

```
gbt(
  diamonds, "price", c("carat", "clarity"), type = "regression", nthread = 1
) %>% summary()
```

---

houseprices *Houseprices*

Description

Houseprices

Usage

```
data(houseprices)
```

Format

A data frame with 128 home sales and 6 variables

Details

Description provided in attr(houseprices, "description")

---

ideal *Ideal data for linear regression*

Description

Ideal data for linear regression

Usage

```
data(ideal)
```

Format

A data frame with 1,000 rows and 4 variables

Details

Description provided in attr(ideal, "description")

kaggle_uplift *Kaggle uplift*

Description

Kaggle uplift

Usage

```
data(kaggle_uplift)
```

Format

A data frame with 1,000 rows and 22 variables

Details

Use uplift modeling to quantify the effectiveness of an experimental treatment

ketchup *Data on ketchup choices*

Description

Data on ketchup choices

Usage

```
data(ketchup)
```

Format

A data frame with 2,798 rows and 14 variables

Details

Choice behavior for a sample of 300 individuals in a panel of households in Springfield, Missouri (USA). Description provided in attr(ketchup,"description")

`logistic` *Logistic regression*

Description

Logistic regression

Usage

```
logistic(
  dataset,
  rvar,
  evar,
  lev = "",
  int = "",
  wts = "None",
  check = "",
  form,
  ci_type,
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

`dataset`	Dataset
`rvar`	The response variable in the model
`evar`	Explanatory variables in the model
`lev`	The level in the response variable defined as _success_
`int`	Interaction term to include in the model
`wts`	Weights to use in estimation
`check`	Use "standardize" to see standardized coefficient estimates. Use "stepwise-backward" (or "stepwise-forward", or "stepwise-both") to apply step-wise selection of variables in estimation. Add "robust" for robust estimation of standard errors (HC1)
`form`	Optional formula to use instead of rvar, evar, and int
`ci_type`	To use the profile-likelihood (rather than Wald) for confidence intervals use "profile". For datasets with more than 5,000 rows the Wald method will be used, unless "profile" is explicitly set
`data_filter`	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
`arr`	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
`rows`	Rows to select from the specified dataset
`envir`	Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/model/logistic.html for an example in Radiant

Value

A list with all variables defined in logistic as an object of class logistic

See Also

summary.logistic to summarize the results

plot.logistic to plot the results

predict.logistic to generate predictions

plot.model.predict to plot prediction output

Examples

```
logistic(titanic, "survived", c("pclass", "sex"), lev = "Yes") %>% summary()
logistic(titanic, "survived", c("pclass", "sex")) %>% str()
```

MAE *Mean Absolute Error*

Description

Mean Absolute Error

Usage

```
MAE(pred, rvar)
```

Arguments

pred	Prediction (vector)
rvar	Response (vector)

Value

Mean Absolute Error

minmax *Calculate min and max before standardization*

Description

Calculate min and max before standardization

Usage

```
minmax(dataset)
```

Arguments

dataset	Data frame

Value

Data frame min and max attributes

mnl *Multinomial logistic regression*

Description

Multinomial logistic regression

Usage

```
mnl(
  dataset,
  rvar,
  evar,
  lev = "",
  int = "",
  wts = "None",
  check = "",
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

dataset	Dataset
rvar	The response variable in the model
evar	Explanatory variables in the model
lev	The level in the response variable to use as the baseline
int	Interaction term to include in the model
wts	Weights to use in estimation
check	Use "standardize" to see standardized coefficient estimates. Use "stepwise-backward" (or "stepwise-forward", or "stepwise-both") to apply step-wise selection of variables in estimation.
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/model/mnl.html for an example in Radiant

Value

A list with all variables defined in mnl as an object of class mnl

See Also

summary.mnl to summarize the results

plot.mnl to plot the results

predict.mnl to generate predictions

plot.model.predict to plot prediction output

Examples

```
result <- mnl(
  ketchup,
  rvar = "choice",
  evar = c("price.heinz28", "price.heinz32", "price.heinz41", "price.hunts32"),
  lev = "heinz28"
)
str(result)
```

movie_contract *Movie contract decision tree*

Description

Movie contract decision tree

Usage

```
data(movie_contract)
```

Format

A nested list for decision and chance nodes, probabilities and payoffs

Details

Use decision analysis to create a decision tree for an actor facing a contract decision

nb *Naive Bayes using e1071::naiveBayes*

Description

Naive Bayes using e1071::naiveBayes

Usage

```
nb(
  dataset,
  rvar,
  evar,
  laplace = 0,
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

dataset	Dataset
rvar	The response variable in the logit (probit) model
evar	Explanatory variables in the model
laplace	Positive double controlling Laplace smoothing. The default (0) disables Laplace smoothing.
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/model/nb.html for an example in Radiant

Value

A list with all variables defined in nb as an object of class nb

See Also

summary.nb to summarize results

plot.nb to plot results

predict.nb for prediction

Examples

```
nb(titanic, "survived", c("pclass", "sex", "age")) %>% summary()
nb(titanic, "survived", c("pclass", "sex", "age")) %>% str()
```

---

nn *Neural Networks using nnet*

Description

Neural Networks using nnet

Usage

```
nn(
  dataset,
  rvar,
  evar,
  type = "classification",
  lev = "",
  size = 1,
  decay = 0.5,
  wts = "None",
  seed = NA,
  check = "standardize",
  form,
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

dataset	Dataset
rvar	The response variable in the model
evar	Explanatory variables in the model
type	Model type (i.e., "classification" or "regression")
lev	The level in the response variable defined as _success_
size	Number of units (nodes) in the hidden layer
decay	Parameter decay
wts	Weights to use in estimation
seed	Random seed to use as the starting point
check	Optional estimation parameters ("standardize" is the default)
form	Optional formula to use instead of rvar and evar
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/model/nn.html for an example in Radiant

Value

A list with all variables defined in nn as an object of class nn

See Also

summary.nn to summarize results

plot.nn to plot results

predict.nn for prediction

Examples

```
nn(titanic, "survived", c("pclass", "sex"), lev = "Yes") %>% summary()
nn(titanic, "survived", c("pclass", "sex")) %>% str()
nn(diamonds, "price", c("carat", "clarity"), type = "regression") %>% summary()
```

---

onehot *One hot encoding of data.frames*

Description

One hot encoding of data.frames

Usage

```
onehot(dataset, all = FALSE, df = FALSE)
```

Arguments

dataset	Dataset to endcode
all	Extract all factor levels (e.g., for tree-based models)
df	Return a data.frame (tibble)

Examples

```
head(onehot(diamonds, df = TRUE))
head(onehot(diamonds, all = TRUE, df = TRUE))
```

pdp_plot *Create Partial Dependence Plots*

Description

Create Partial Dependence Plots

Usage

```
pdp_plot(
  x,
  plot_list = list(),
  incl,
  incl_int,
  fix = TRUE,
  hline = TRUE,
  nr = 20,
  minq = 0.025,
  maxq = 0.975
)
```

Arguments

x	Return value from a model
plot_list	List used to store plots
incl	Which variables to include in PDP plots
incl_int	Which interactions to investigate in PDP plots
fix	Set the desired limited on yhat or have it calculated automatically. Set to FALSE to have y-axis limits set by ggplot2 for each plot
hline	Add a horizontal line at the average of the target variable. When set to FALSE no line is added. When set to a specific number, the horizontal line will be added at that value
nr	Number of values to use to generate predictions for a numeric explanatory variable
minq	Quantile to use for the minimum value for simulation of numeric variables
maxq	Quantile to use for the maximum value for simulation of numeric variables

`plot.confusion` *Plot method for the confusion matrix*

Description

Plot method for the confusion matrix

Usage

```
## S3 method for class 'confusion'
plot(
  x,
  vars = c("kappa", "index", "ROME", "AUC"),
  scale_y = TRUE,
  size = 13,
  ...
)
```

Arguments

x	Return value from `confusion`
vars	Measures to plot, i.e., one or more of "TP", "FP", "TN", "FN", "total", "TPR", "TNR", "precision", "accuracy", "kappa", "profit", "index", "ROME", "contact", "AUC"
scale_y	Free scale in faceted plot of the confusion matrix (TRUE or FALSE)
size	Font size used
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

See Also

`confusion` to generate results

`summary.confusion` to summarize results

Examples

```
data.frame(buy = dvd$buy, pred1 = runif(20000), pred2 = ifelse(dvd$buy == "yes", 1, 0)) %>%
  confusion(c("pred1", "pred2"), "buy") %>%
  plot()
```

plot.crs *Plot method for the crs function*

Description

Plot method for the crs function

Usage

```
## S3 method for class 'crs'
plot(x, ...)
```

Arguments

x	Return value from crs
...	further arguments passed to or from other methods

Details

Plot that compares actual to predicted ratings. See https://radiant-rstats.github.io/docs/model/crs.html for an example in Radiant

See Also

crs to generate results

summary.crs to summarize results

plot.crtree *Plot method for the crtree function*

Description

Plot method for the crtree function

Usage

```
## S3 method for class 'crtree'
plot(
  x,
  plots = "tree",
  orient = "LR",
  width = "900px",
  labs = TRUE,
  nrobs = Inf,
  dec = 2,
```

```
  incl = NULL,
  incl_int = NULL,
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

x	Return value from crtree
plots	Plots to produce for the specified rpart tree. "tree" shows a tree diagram. "prune" shows a line graph to evaluate appropriate tree pruning. "imp" shows a variable importance plot
orient	Plot orientation for tree: LR for vertical and TD for horizontal
width	Plot width in pixels for tree (default is "900px")
labs	Use factor labels in plot (TRUE) or revert to default letters used by tree (FALSE)
nrobs	Number of data points to show in dashboard scatter plots (-1 for all)
dec	Decimal places to round results to
incl	Which variables to include in a coefficient plot or PDP plot
incl_int	Which interactions to investigate in PDP plots
shiny	Did the function call originate inside a shiny app
custom	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
...	further arguments passed to or from other methods

Details

Plot a decision tree using mermaid, permutation plots , prediction plots, or partial dependence plots. For regression trees, a residual dashboard can be plotted. See https://radiant-rstats.github.io/docs/model/crtree.html for an example in Radiant.

See Also

crtree to generate results

summary.crtree to summarize results

predict.crtree for prediction

Examples

```
result <- crtree(titanic, "survived", c("pclass", "sex"), lev = "Yes")
plot(result)
result <- crtree(diamonds, "price", c("carat", "clarity", "cut"))
plot(result, plots = "prune")
result <- crtree(dvd, "buy", c("coupon", "purch", "last"), cp = .01)
```

```
plot(result, plots = "imp")
```

`plot.dtree` *Plot method for the dtree function*

Description

Plot method for the dtree function

Usage

```
## S3 method for class 'dtree'
plot(
  x,
  symbol = "$",
  dec = 2,
  final = FALSE,
  orient = "LR",
  width = "900px",
  ...
)
```

Arguments

`x`	Return value from `dtree`
`symbol`	Monetary symbol to use ($ is the default)
`dec`	Decimal places to round results to
`final`	If TRUE plot the decision tree solution, else the initial decision tree
`orient`	Plot orientation: LR for vertical and TD for horizontal
`width`	Plot width in pixels (default is "900px")
`...`	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/dtree.html for an example in Radiant

See Also

`dtree` to generate the result

`summary.dtree` to summarize results

`sensitivity.dtree` to plot results

Examples

```
dtree(movie_contract, opt = "max") %>% plot()
dtree(movie_contract, opt = "max") %>% plot(final = TRUE, orient = "TD")
```

`plot.evalbin` *Plot method for the evalbin function*

Description

Plot method for the evalbin function

Usage

```
## S3 method for class 'evalbin'
plot(
  x,
  plots = c("lift", "gains"),
  size = 13,
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

`x`	Return value from `evalbin`
`plots`	Plots to return
`size`	Font size used
`shiny`	Did the function call originate inside a shiny app
`custom`	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
`...`	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

See Also

`evalbin` to generate results

`summary.evalbin` to summarize results

Examples

```
data.frame(buy = dvd$buy, pred1 = runif(20000), pred2 = ifelse(dvd$buy == "yes", 1, 0)) %>%
  evalbin(c("pred1", "pred2"), "buy") %>%
  plot()
```

plot.evalreg *Plot method for the evalreg function*

Description

Plot method for the evalreg function

Usage

```
## S3 method for class 'evalreg'
plot(x, vars = c("Rsq", "RMSE", "MAE"), ...)
```

Arguments

x	Return value from evalreg
vars	Measures to plot, i.e., one or more of "Rsq", "RMSE", "MAE"
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/evalreg.html for an example in Radiant

See Also

evalreg to generate results

summary.evalreg to summarize results

Examples

```
data.frame(price = diamonds$price, pred1 = rnorm(3000), pred2 = diamonds$price) %>%
  evalreg(pred = c("pred1", "pred2"), "price") %>%
  plot()
```

plot.gbt *Plot method for the gbt function*

Description

Plot method for the gbt function

Usage

```
## S3 method for class 'gbt'
plot(
  x,
  plots = "",
  nrobs = Inf,
  incl = NULL,
  incl_int = NULL,
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

x	Return value from gbt
plots	Plots to produce for the specified Gradient Boosted Tree model. Use "" to avoid showing any plots (default). Options are ...
nrobs	Number of data points to show in scatter plots (-1 for all)
incl	Which variables to include in a coefficient plot or PDP plot
incl_int	Which interactions to investigate in PDP plots
shiny	Did the function call originate inside a shiny app
custom	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/gbt.html for an example in Radiant

See Also

gbt to generate results

summary.gbt to summarize results

predict.gbt for prediction

Examples

```
result <- gbt(
  titanic, "survived", c("pclass", "sex"),
  early_stopping_rounds = 0, nthread = 1
)
plot(result)
```

plot.logistic *Plot method for the logistic function*

Description

Plot method for the logistic function

Usage

```
## S3 method for class 'logistic'
plot(
  x,
  plots = "coef",
  conf_lev = 0.95,
  intercept = FALSE,
  incl = NULL,
  excl = NULL,
  incl_int = NULL,
  nrobs = -1,
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

x	Return value from logistic
plots	Plots to produce for the specified GLM model. Use "" to avoid showing any plots (default). "dist" shows histograms (or frequency bar plots) of all variables in the model. "scatter" shows scatter plots (or box plots for factors) for the response variable with each explanatory variable. "coef" provides a coefficient plot and "influence" shows (potentially) influential observations
conf_lev	Confidence level to use for coefficient and odds confidence intervals (.95 is the default)
intercept	Include the intercept in the coefficient plot (TRUE or FALSE). FALSE is the default
incl	Which variables to include in a coefficient plot
excl	Which variables to exclude in a coefficient plot
incl_int	Which interactions to investigate in PDP plots
nrobs	Number of data points to show in scatter plots (-1 for all)
shiny	Did the function call originate inside a shiny app
custom	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/logistic.html for an example in Radiant

See Also

logistic to generate results

plot.logistic to plot results

predict.logistic to generate predictions

plot.model.predict to plot prediction output

Examples

```
result <- logistic(titanic, "survived", c("pclass", "sex"), lev = "Yes")
plot(result, plots = "coef")
```

---

plot.mnl *Plot method for the mnl function*

Description

Plot method for the mnl function

Usage

```
## S3 method for class 'mnl'
plot(
  x,
  plots = "coef",
  conf_lev = 0.95,
  intercept = FALSE,
  nrobs = -1,
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

x	Return value from mnl
plots	Plots to produce for the specified MNL model. Use "" to avoid showing any plots (default). "dist" shows histograms (or frequency bar plots) of all variables in the model. "scatter" shows scatter plots (or box plots for factors) for the response variable with each explanatory variable. "coef" provides a coefficient plot
conf_lev	Confidence level to use for coefficient and relative risk ratios (RRRs) intervals (.95 is the default)

intercept	Include the intercept in the coefficient plot (TRUE or FALSE). FALSE is the default
nrobs	Number of data points to show in scatter plots (-1 for all)
shiny	Did the function call originate inside a shiny app
custom	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/mnl.html for an example in Radiant

See Also

mnl to generate results

predict.mnl to generate predictions

plot.model.predict to plot prediction output

Examples

```
result <- mnl(
  ketchup,
  rvar = "choice",
  evar = c("price.heinz28", "price.heinz32", "price.heinz41", "price.hunts32"),
  lev = "heinz28"
)
plot(result, plots = "coef")
```

---

plot.mnl.predict *Plot method for mnl.predict function*

Description

Plot method for mnl.predict function

Usage

```
## S3 method for class 'mnl.predict'
plot(x, xvar = "", facet_row = ".", facet_col = ".", color = ".class", ...)
```

Arguments

x	Return value from predict function predict.mnl
xvar	Variable to display along the X-axis of the plot
facet_row	Create vertically arranged subplots for each level of the selected factor variable
facet_col	Create horizontally arranged subplots for each level of the selected factor variable
color	Adds color to a scatter plot to generate a heat map. For a line plot one line is created for each group and each is assigned a different color
...	further arguments passed to or from other methods

See Also

predict.mnl to generate predictions

Examples

```
result <- mnl(
  ketchup,
  rvar = "choice",
  evar = c("price.heinz28", "price.heinz32", "price.heinz41", "price.hunts32"),
  lev = "heinz28"
)
pred <- predict(result, pred_cmd = "price.heinz28 = seq(3, 5, 0.1)")
plot(pred, xvar = "price.heinz28")
```

---

plot.model.predict *Plot method for model.predict functions*

Description

Plot method for model.predict functions

Usage

```
## S3 method for class 'model.predict'
plot(
  x,
  xvar = "",
  facet_row = ".",
  facet_col = ".",
  color = "none",
  conf_lev = 0.95,
  ...
)
```

Arguments

x	Return value from predict functions (e.g., predict.regress)
xvar	Variable to display along the X-axis of the plot
facet_row	Create vertically arranged subplots for each level of the selected factor variable
facet_col	Create horizontally arranged subplots for each level of the selected factor variable
color	Adds color to a scatter plot to generate a heat map. For a line plot one line is created for each group and each is assigned a different color
conf_lev	Confidence level to use for prediction intervals (.95 is the default)
...	further arguments passed to or from other methods

See Also

predict.regress to generate predictions

predict.logistic to generate predictions

Examples

```
regress(diamonds, "price", c("carat", "clarity")) %>%
  predict(pred_cmd = "carat = 1:10") %>%
  plot(xvar = "carat")
logistic(titanic, "survived", c("pclass", "sex", "age"), lev = "Yes") %>%
  predict(pred_cmd = c("pclass = levels(pclass)", "sex = levels(sex)", "age = 0:100")) %>%
  plot(xvar = "age", color = "sex", facet_col = "pclass")
```

---

plot.nb *Plot method for the nb function*

Description

Plot method for the nb function

Usage

```
## S3 method for class 'nb'
plot(x, plots = "correlations", lev = "All levels", nrobs = 1000, ...)
```

Arguments

x	Return value from nb
plots	Plots to produce for the specified model. Use "" to avoid showing any plots. Use "vimp" for variable importance or "correlations" to examine conditional independence

lev	The level(s) in the response variable used as the basis for plots (defaults to "All levels")
nrobs	Number of data points to show in scatter plots (-1 for all)
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/nb.html for an example in Radiant

See Also

nb to generate results

summary.nb to summarize results

predict.nb for prediction

Examples

```
result <- nb(titanic, "survived", c("pclass", "sex"))
plot(result)
result <- nb(titanic, "pclass", c("sex", "age"))
plot(result)
```

---

plot.nb.predict *Plot method for nb.predict function*

Description

Plot method for nb.predict function

Usage

```
## S3 method for class 'nb.predict'
plot(x, xvar = "", facet_row = ".", facet_col = ".", color = ".class", ...)
```

Arguments

x	Return value from predict function predict.nb
xvar	Variable to display along the X-axis of the plot
facet_row	Create vertically arranged subplots for each level of the selected factor variable
facet_col	Create horizontally arranged subplots for each level of the selected factor variable
color	Adds color to a scatter plot to generate a heat map. For a line plot one line is created for each group and each is assigned a different color
...	further arguments passed to or from other methods

See Also

predict.nb to generate predictions

Examples

```
result <- nb(titanic, "survived", c("pclass", "sex", "age"))
pred <- predict(
  result,
  pred_cmd = c("pclass = levels(pclass)", "sex = levels(sex)", "age = seq(0, 100, 20)")
)
plot(pred, xvar = "age", facet_col = "sex", facet_row = "pclass")
pred <- predict(result, pred_data = titanic)
plot(pred, xvar = "age", facet_col = "sex")
```

---

plot.nn *Plot method for the nn function*

Description

Plot method for the nn function

Usage

```
## S3 method for class 'nn'
plot(
  x,
  plots = "vip",
  size = 12,
  pad_x = 0.9,
  nrobs = -1,
  incl = NULL,
  incl_int = NULL,
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

x	Return value from nn
plots	Plots to produce for the specified Neural Network model. Use "" to avoid showing any plots (default). Options are "olden" or "garson" for importance plots, or "net" to depict the network structure
size	Font size used
pad_x	Padding for explanatory variable labels in the network plot. Default value is 0.9, smaller numbers (e.g., 0.5) increase the amount of padding

nrobs	Number of data points to show in dashboard scatter plots (-1 for all)
incl	Which variables to include in a coefficient plot or PDP plot
incl_int	Which interactions to investigate in PDP plots
shiny	Did the function call originate inside a shiny app
custom	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/nn.html for an example in Radiant

See Also

nn to generate results

summary.nn to summarize results

predict.nn for prediction

Examples

```
result <- nn(titanic, "survived", c("pclass", "sex"), lev = "Yes")
plot(result, plots = "net")
plot(result, plots = "olden")
```

---

plot.regress *Plot method for the regress function*

Description

Plot method for the regress function

Usage

```
## S3 method for class 'regress'
plot(
  x,
  plots = "",
  lines = "",
  conf_lev = 0.95,
  intercept = FALSE,
  incl = NULL,
  excl = NULL,
  incl_int = NULL,
  nrobs = -1,
```

```
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

x	Return value from regress
plots	Regression plots to produce for the specified regression model. Enter "" to avoid showing any plots (default). "dist" to shows histograms (or frequency bar plots) of all variables in the model. "correlations" for a visual representation of the correlation matrix selected variables. "scatter" to show scatter plots (or box plots for factors) for the response variable with each explanatory variable. "dashboard" for a series of six plots that can be used to evaluate model fit visually. "resid_pred" to plot the explanatory variables against the model residuals. "coef" for a coefficient plot with adjustable confidence intervals and "influence" to show (potentially) influential observations
lines	Optional lines to include in the select plot. "line" to include a line through a scatter plot. "loess" to include a polynomial regression fit line. To include both use c("line", "loess")
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
intercept	Include the intercept in the coefficient plot (TRUE, FALSE). FALSE is the default
incl	Which variables to include in a coefficient plot or PDP plot
excl	Which variables to exclude in a coefficient plot
incl_int	Which interactions to investigate in PDP plots
nrobs	Number of data points to show in scatter plots (-1 for all)
shiny	Did the function call originate inside a shiny app
custom	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/regress.html for an example in Radiant

See Also

regress to generate the results

summary.regress to summarize results

predict.regress to generate predictions

Examples

```
result <- regress(diamonds, "price", c("carat", "clarity"))
plot(result, plots = "coef", conf_lev = .99, intercept = TRUE)
## Not run:
plot(result, plots = "dist")
plot(result, plots = "scatter", lines = c("line", "loess"))
plot(result, plots = "resid_pred", lines = "line")
plot(result, plots = "dashboard", lines = c("line", "loess"))

## End(Not run)
```

---

plot.repeater *Plot repeated simulation*

Description

Plot repeated simulation

Usage

```
## S3 method for class 'repeater'
plot(x, bins = 20, shiny = FALSE, custom = FALSE, ...)
```

Arguments

x	Return value from repeater
bins	Number of bins used for histograms (1 - 50)
shiny	Did the function call originate inside a shiny app
custom	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
...	further arguments passed to or from other methods

See Also

repeater to run a repeated simulation

summary.repeater to summarize results from repeated simulation

`plot.rforest` *Plot method for the rforest function*

Description

Plot method for the rforest function

Usage

```
## S3 method for class 'rforest'
plot(
  x,
  plots = "",
  nrobs = Inf,
  incl = NULL,
  incl_int = NULL,
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

x	Return value from rforest
plots	Plots to produce for the specified Random Forest model. Use "" to avoid showing any plots (default). Options are ...
nrobs	Number of data points to show in dashboard scatter plots (-1 for all)
incl	Which variables to include in PDP or Prediction plots
incl_int	Which interactions to investigate in PDP or Prediction plots
shiny	Did the function call originate inside a shiny app
custom	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/rforest.html for an example in Radiant

See Also

rforest to generate results

summary.rforest to summarize results

predict.rforest for prediction

Examples

```
result <- rforest(titanic, "survived", c("pclass", "sex"), lev = "Yes")
```

`plot.rforest.predict` *Plot method for rforest.predict function*

Description

Plot method for rforest.predict function

Usage

```
## S3 method for class 'rforest.predict'
plot(x, xvar = "", facet_row = ".", facet_col = ".", color = "none", ...)
```

Arguments

`x`	Return value from predict function predict.rforest
`xvar`	Variable to display along the X-axis of the plot
`facet_row`	Create vertically arranged subplots for each level of the selected factor variable
`facet_col`	Create horizontally arranged subplots for each level of the selected factor variable
`color`	Adds color to a scatter plot to generate a heat map. For a line plot one line is created for each group and each is assigned a different color
`...`	further arguments passed to or from other methods

See Also

`predict.mnl` to generate predictions

Examples

```
result <- mnl(
  ketchup,
  rvar = "choice",
  evar = c("price.heinz28", "price.heinz32", "price.heinz41", "price.hunts32"),
  lev = "heinz28"
)
pred <- predict(result, pred_cmd = "price.heinz28 = seq(3, 5, 0.1)")
plot(pred, xvar = "price.heinz28")
```

`plot.simulater` *Plot method for the simulater function*

Description

Plot method for the simulater function

Usage

```
## S3 method for class 'simulater'
plot(x, bins = 20, shiny = FALSE, custom = FALSE, ...)
```

Arguments

`x`	Return value from `simulater`
`bins`	Number of bins used for histograms (1 - 50)
`shiny`	Did the function call originate inside a shiny app
`custom`	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
`...`	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/simulater for an example in Radiant

See Also

`simulater` to generate the result

`summary.simulater` to summarize results

Examples

```
simdat <- simulater(
  const = "cost 3",
  norm = "demand 2000 1000",
  discrete = "price 5 8 .3 .7",
  form = "profit = demand * (price - cost)",
  seed = 1234
)
plot(simdat, bins = 25)
```

`plot.uplift` *Plot method for the uplift function*

Description

Plot method for the uplift function

Usage

```
## S3 method for class 'uplift'
plot(
  x,
  plots = c("inc_uplift", "uplift"),
  size = 13,
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

`x`	Return value from `evalbin`
`plots`	Plots to return
`size`	Font size used
`shiny`	Did the function call originate inside a shiny app
`custom`	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
`...`	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

See Also

`evalbin` to generate results

`summary.evalbin` to summarize results

Examples

```
data.frame(buy = dvd$buy, pred1 = runif(20000), pred2 = ifelse(dvd$buy == "yes", 1, 0)) %>%
  evalbin(c("pred1", "pred2"), "buy") %>%
  plot()
```

predict.crtree *Predict method for the crtree function*

Description

Predict method for the crtree function

Usage

```
## S3 method for class 'crtree'
predict(
  object,
  pred_data = NULL,
  pred_cmd = "",
  conf_lev = 0.95,
  se = FALSE,
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments

object	Return value from crtree
pred_data	Provide the dataframe to generate predictions (e.g., titanic). The dataset must contain all columns used in the estimation
pred_cmd	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable, create a vector of prediction strings, (e.g., c('pclass = levels(pclass)', 'age = seq(0,100,20)')
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
se	Logical that indicates if prediction standard errors should be calculated (default = FALSE)
dec	Number of decimals to show
envir	Environment to extract data from
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/crtree.html for an example in Radiant

See Also

crtree to generate the result

summary.crtree to summarize results

Examples

```
result <- crtree(titanic, "survived", c("pclass", "sex"), lev = "Yes")
predict(result, pred_cmd = "pclass = levels(pclass)")
result <- crtree(titanic, "survived", "pclass", lev = "Yes")
predict(result, pred_data = titanic) %>% head()
```

`predict.gbt` *Predict method for the gbt function*

Description

Predict method for the gbt function

Usage

```
## S3 method for class 'gbt'
predict(
  object,
  pred_data = NULL,
  pred_cmd = "",
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments

`object`	Return value from `gbt`
`pred_data`	Provide the dataframe to generate predictions (e.g., diamonds). The dataset must contain all columns used in the estimation
`pred_cmd`	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable, create a vector of prediction strings, (e.g., c('pclass = levels(pclass)', 'age = seq(0,100,20)')
`dec`	Number of decimals to show
`envir`	Environment to extract data from
`...`	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/gbt.html for an example in Radiant

See Also

`gbt` to generate the result

`summary.gbt` to summarize results

Examples

```
result <- gbt(
  titanic, "survived", c("pclass", "sex"),
  early_stopping_rounds = 2, nthread = 1
)
predict(result, pred_cmd = "pclass = levels(pclass)")
result <- gbt(diamonds, "price", "carat:color", type = "regression", nthread = 1)
predict(result, pred_cmd = "carat = 1:3")
predict(result, pred_data = diamonds) %>% head()
```

`predict.logistic` *Predict method for the logistic function*

Description

Predict method for the logistic function

Usage

```
## S3 method for class 'logistic'
predict(
  object,
  pred_data = NULL,
  pred_cmd = "",
  conf_lev = 0.95,
  se = TRUE,
  interval = "confidence",
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments

`object`	Return value from `logistic`
`pred_data`	Provide the dataframe to generate predictions (e.g., titanic). The dataset must contain all columns used in the estimation
`pred_cmd`	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable, create a vector of prediction strings, (e.g., c('pclass = levels(pclass)', 'age = seq(0,100,20)')
`conf_lev`	Confidence level used to estimate confidence intervals (.95 is the default)
`se`	Logical that indicates if prediction standard errors should be calculated (default = FALSE)
`interval`	Type of interval calculation ("confidence" or "none"). Set to "none" if se is FALSE

dec	Number of decimals to show
envir	Environment to extract data from
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/logistic.html for an example in Radiant

See Also

logistic to generate the result

summary.logistic to summarize results

plot.logistic to plot results

plot.model.predict to plot prediction output

Examples

```
result <- logistic(titanic, "survived", c("pclass", "sex"), lev = "Yes")
predict(result, pred_cmd = "pclass = levels(pclass)")
logistic(titanic, "survived", c("pclass", "sex"), lev = "Yes") %>%
  predict(pred_cmd = "sex = c('male','female')")
logistic(titanic, "survived", c("pclass", "sex"), lev = "Yes") %>%
  predict(pred_data = titanic)
```

---

predict.mnl *Predict method for the mnl function*

Description

Predict method for the mnl function

Usage

```
## S3 method for class 'mnl'
predict(
  object,
  pred_data = NULL,
  pred_cmd = "",
  pred_names = "",
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments

object	Return value from mnl
pred_data	Provide the dataframe to generate predictions (e.g., ketchup). The dataset must contain all columns used in the estimation
pred_cmd	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable, create a vector of prediction strings, (e.g., c('pclass = levels(pclass)', 'age = seq(0,100,20)')
pred_names	Names for the predictions to be stored. If one name is provided, only the first column of predictions is stored. If empty, the levels in the response variable of the mnl model will be used
dec	Number of decimals to show
envir	Environment to extract data from
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/mnl.html for an example in Radiant

See Also

mnl to generate the result

summary.mnl to summarize results

Examples

```
result <- mnl(
  ketchup,
  rvar = "choice",
  evar = c("price.heinz28", "price.heinz32", "price.heinz41", "price.hunts32"),
  lev = "heinz28"
)
predict(result, pred_cmd = "price.heinz28 = seq(3, 5, 0.1)")
predict(result, pred_data = slice(ketchup, 1:20))
```

---

predict.nb *Predict method for the nb function*

Description

Predict method for the nb function

Usage

```
## S3 method for class 'nb'
predict(
  object,
  pred_data = NULL,
  pred_cmd = "",
  pred_names = "",
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments

object	Return value from nb
pred_data	Provide the dataframe to generate predictions (e.g., titanic). The dataset must contain all columns used in the estimation
pred_cmd	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable, create a vector of prediction strings, (e.g., c('pclass = levels(pclass)', 'age = seq(0,100,20)')
pred_names	Names for the predictions to be stored. If one name is provided, only the first column of predictions is stored. If empty, the level in the response variable of the nb model will be used
dec	Number of decimals to show
envir	Environment to extract data from
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/nb.html for an example in Radiant

See Also

nb to generate the result

summary.nb to summarize results

Examples

```
result <- nb(titanic, "survived", c("pclass", "sex", "age"))
predict(result, pred_data = titanic)
predict(result, pred_data = titanic, pred_names = c("Yes", "No"))
predict(result, pred_cmd = "pclass = levels(pclass)")
result <- nb(titanic, "pclass", c("survived", "sex", "age"))
predict(result, pred_data = titanic)
predict(result, pred_data = titanic, pred_names = c("1st", "2nd", "3rd"))
predict(result, pred_data = titanic, pred_names = "")
```

predict.nn *Predict method for the nn function*

Description

Predict method for the nn function

Usage

```
## S3 method for class 'nn'
predict(
  object,
  pred_data = NULL,
  pred_cmd = "",
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments

object	Return value from nn
pred_data	Provide the dataframe to generate predictions (e.g., diamonds). The dataset must contain all columns used in the estimation
pred_cmd	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable, create a vector of prediction strings, (e.g., c('pclass = levels(pclass)', 'age = seq(0,100,20)')
dec	Number of decimals to show
envir	Environment to extract data from
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/nn.html for an example in Radiant

See Also

nn to generate the result

summary.nn to summarize results

Examples

```
result <- nn(titanic, "survived", c("pclass", "sex"), lev = "Yes")
predict(result, pred_cmd = "pclass = levels(pclass)")
result <- nn(diamonds, "price", "carat:color", type = "regression")
predict(result, pred_cmd = "carat = 1:3")
predict(result, pred_data = diamonds) %>% head()
```

`predict.regress` *Predict method for the regress function*

Description

Predict method for the regress function

Usage

```
## S3 method for class 'regress'
predict(
  object,
  pred_data = NULL,
  pred_cmd = "",
  conf_lev = 0.95,
  se = TRUE,
  interval = "confidence",
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments

`object`	Return value from `regress`
`pred_data`	Provide the dataframe to generate predictions (e.g., diamonds). The dataset must contain all columns used in the estimation
`pred_cmd`	Command used to generate data for prediction
`conf_lev`	Confidence level used to estimate confidence intervals (.95 is the default)
`se`	Logical that indicates if prediction standard errors should be calculated (default = FALSE)
`interval`	Type of interval calculation ("confidence" or "prediction"). Set to "none" if se is FALSE
`dec`	Number of decimals to show
`envir`	Environment to extract data from
`...`	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/regress.html for an example in Radiant

See Also

regress to generate the result

summary.regress to summarize results

plot.regress to plot results

Examples

```
result <- regress(diamonds, "price", c("carat", "clarity"))
predict(result, pred_cmd = "carat = 1:10")
predict(result, pred_cmd = "clarity = levels(clarity)")
result <- regress(diamonds, "price", c("carat", "clarity"), int = "carat:clarity")
predict(result, pred_data = diamonds) %>% head()
```

---

predict.rforest *Predict method for the rforest function*

Description

Predict method for the rforest function

Usage

```
## S3 method for class 'rforest'
predict(
  object,
  pred_data = NULL,
  pred_cmd = "",
  pred_names = "",
  OOB = NULL,
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments

object	Return value from rforest
pred_data	Provide the dataframe to generate predictions (e.g., diamonds). The dataset must contain all columns used in the estimation

pred_cmd	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable, create a vector of prediction strings, (e.g., c('pclass = levels(pclass)', 'age = seq(0,100,20)')
pred_names	Names for the predictions to be stored. If one name is provided, only the first column of predictions is stored. If empty, the levels in the response variable of the rforest model will be used
OOB	Use Out-Of-Bag predictions (TRUE or FALSE). Relevant when evaluating predictions for the training sample. If set to NULL, datasets will be compared to determine if OOB predictions should be used
dec	Number of decimals to show
envir	Environment to extract data from
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/rforest.html for an example in Radiant

See Also

rforest to generate the result

summary.rforest to summarize results

Examples

```
result <- rforest(titanic, "survived", c("pclass", "sex"), lev = "Yes")
predict(result, pred_cmd = "pclass = levels(pclass)")
result <- rforest(diamonds, "price", "carat:color", type = "regression")
predict(result, pred_cmd = "carat = 1:3")
predict(result, pred_data = diamonds) %>% head()
```

---

predict_model *Predict method for model functions*

Description

Predict method for model functions

Usage

```
predict_model(
  object,
  pfun,
  mclass,
  pred_data = NULL,
  pred_cmd = "",
  conf_lev = 0.95,
  se = FALSE,
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments

object	Return value from regress
pfun	Function to use for prediction
mclass	Model class to attach
pred_data	Dataset to use for prediction
pred_cmd	Command used to generate data for prediction (e.g., 'carat = 1:10')
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
se	Logical that indicates if prediction standard errors should be calculated (default = FALSE)
dec	Number of decimals to show
envir	Environment to extract data from
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/regress.html for an example in Radiant

---

pred_plot *Prediction Plots*

Description

Prediction Plots

Usage

```
pred_plot(
  x,
  plot_list = list(),
  incl,
  incl_int,
  fix = TRUE,
  hline = TRUE,
  nr = 20,
  minq = 0.025,
  maxq = 0.975
)
```

Arguments

x	Return value from a model
plot_list	List used to store plots
incl	Which variables to include in prediction plots
incl_int	Which interactions to investigate in prediction plots
fix	Set the desired limited on yhat or have it calculated automatically. Set to FALSE to have y-axis limits set by ggplot2 for each plot
hline	Add a horizontal line at the average of the target variable. When set to FALSE no line is added. When set to a specific number, the horizontal line will be added at that value
nr	Number of values to use to generate predictions for a numeric explanatory variable
minq	Quantile to use for the minimum value for simulation of numeric variables
maxq	Quantile to use for the maximum value for simulation of numeric variables

Details

Faster, but less robust, alternative for PDP plots. Variable values not included in the prediction are set to either the mean or the most common value (level)

---

print.crtree.predict *Print method for predict.crtree*

Description

Print method for predict.crtree

Usage

```
## S3 method for class 'crtree.predict'
print(x, ..., n = 10)
```

Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

---

print.gbt.predict *Print method for predict.gbt*

Description

Print method for predict.gbt

Usage

```
## S3 method for class 'gbt.predict'
print(x, ..., n = 10)
```

Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

---

print.logistic.predict *Print method for logistic.predict*

Description

Print method for logistic.predict

Usage

```
## S3 method for class 'logistic.predict'
print(x, ..., n = 10)
```

Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

print.mnl.predict *Print method for mnl.predict*

Description

Print method for mnl.predict

Usage

```
## S3 method for class 'mnl.predict'
print(x, ..., n = 10)
```

Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

print.nb.predict *Print method for predict.nb*

Description

Print method for predict.nb

Usage

```
## S3 method for class 'nb.predict'
print(x, ..., n = 10)
```

Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

print.nn.predict *Print method for predict.nn*

Description

Print method for predict.nn

Usage

```
## S3 method for class 'nn.predict'
print(x, ..., n = 10)
```

Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

print.regress.predict *Print method for predict.regress*

Description

Print method for predict.regress

Usage

```
## S3 method for class 'regress.predict'
print(x, ..., n = 10)
```

Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

print.rforest.predict *Print method for predict.rforest*

Description

Print method for predict.rforest

Usage

```
## S3 method for class 'rforest.predict'
print(x, ..., n = 10)
```

Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

print_predict_model *Print method for the model prediction*

Description

Print method for the model prediction

Usage

```
print_predict_model(x, ..., n = 10, header = "")
```

Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines
header	Header line

profit *Calculate Profit based on cost:margin ratio*

Description

Calculate Profit based on cost:margin ratio

Usage

```
profit(pred, rvar, lev, cost = 1, margin = 2)
```

Arguments

pred	Prediction or predictor
rvar	Response variable
lev	The level in the response variable defined as success
cost	Cost per treatment (e.g., mailing costs)
margin	Margin, or benefit, per 'success' (e.g., customer purchase). A cost:margin ratio of 1:2 implies the cost of False Positive are equivalent to the benefits of a True Positive

Value

profit

Examples

```
profit(runif(20000), dvd$buy, "yes", cost = 1, margin = 2)
profit(ifelse(dvd$buy == "yes", 1, 0), dvd$buy, "yes", cost = 1, margin = 20)
profit(ifelse(dvd$buy == "yes", 1, 0), dvd$buy)
```

radiant.model *radiant.model*

Description

Launch radiant.model in the default web browser

Usage

```
radiant.model(state, ...)
```

Arguments

state	Path to state file to load
...	additional arguments to pass to shiny::runApp (e.g, port = 8080)

Details

See https://radiant-rstats.github.io/docs/ for documentation and tutorials

Examples

```
## Not run:
radiant.model()

## End(Not run)
```

`radiant.model-deprecated`

Deprecated function(s) in the radiant.model package

Description

These functions are provided for compatibility with previous versions of radiant. They will eventually be removed.

Usage

```
ann(...)
```

Arguments

...	Parameters to be passed to the updated functions

Details

ann is now a synonym for nn
scaledf is now a synonym for scale_df

radiant.model_viewer *Launch radiant.model in the Rstudio viewer*

Description

Launch radiant.model in the Rstudio viewer

Usage

```
radiant.model_viewer(state, ...)
```

Arguments

state	Path to state file to load
...	additional arguments to pass to shiny::runApp (e.g, port = 8080)

Details

See https://radiant-rstats.github.io/docs/ for documentation and tutorials

Examples

```
## Not run:
radiant.model_viewer()

## End(Not run)
```

radiant.model_window *Launch radiant.model in an Rstudio window*

Description

Launch radiant.model in an Rstudio window

Usage

```
radiant.model_window(state, ...)
```

Arguments

state	Path to state file to load
...	additional arguments to pass to shiny::runApp (e.g, port = 8080)

Details

See https://radiant-rstats.github.io/docs/ for documentation and tutorials

Examples

```
## Not run:
radiant.model_window()

## End(Not run)
```

`ratings` *Movie ratings*

Description

Movie ratings

Usage

```
data(ratings)
```

Format

A data frame with 110 rows and 4 variables

Details

Use collaborative filtering to create recommendations based on ratings from existing users. Description provided in attr(ratings, "description")

`regress` *Linear regression using OLS*

Description

Linear regression using OLS

Usage

```
regress(
  dataset,
  rvar,
  evar,
  int = "",
  check = "",
  form,
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

dataset	Dataset
rvar	The response variable in the regression
evar	Explanatory variables in the regression
int	Interaction terms to include in the model
check	Use "standardize" to see standardized coefficient estimates. Use "stepwise-backward" (or "stepwise-forward", or "stepwise-both") to apply step-wise selection of variables in estimation. Add "robust" for robust estimation of standard errors (HC1)
form	Optional formula to use instead of rvar, evar, and int
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/model/regress.html for an example in Radiant

Value

A list of all variables used in the regress function as an object of class regress

See Also

summary.regress to summarize results

plot.regress to plot results

predict.regress to generate predictions

Examples

```
regress(diamonds, "price", c("carat", "clarity"), check = "standardize") %>% summary()
regress(diamonds, "price", c("carat", "clarity")) %>% str()
```

remove_comments *Remove comments from formula before it is evaluated*

Description

Remove comments from formula before it is evaluated

Usage

```
remove_comments(x)
```

Arguments

x	Input string

Value

Cleaned string

render.DiagrammeR *Method to render DiagrammeR plots*

Description

Method to render DiagrammeR plots

Usage

```
## S3 method for class 'DiagrammeR'
render(object, shiny = shiny::getDefaultReactiveDomain(), ...)
```

Arguments

object	DiagrammeR plot
shiny	Check if function is called from a shiny application
...	Additional arguments

repeater *Repeated simulation*

Description

Repeated simulation

Usage

```
repeater(
  dataset,
  nr = 12,
  vars = "",
  grid = "",
  sum_vars = "",
  byvar = ".sim",
  fun = "sum",
  form = "",
  seed = NULL,
  name = "",
  envir = parent.frame()
)
```

Arguments

dataset	Return value from the simulater function
nr	Number times to repeat the simulation
vars	Variables to use in repeated simulation
grid	Character vector of expressions to use in grid search for constants
sum_vars	(Numeric) variables to summaries
byvar	Variable(s) to group data by before summarizing
fun	Functions to use for summarizing
form	A character vector with the formula to apply to the summarized data
seed	Seed for the repeated simulation
name	Deprecated argument
envir	Environment to extract data from

See Also

summary.repeater to summarize results from repeated simulation

plot.repeater to plot results from repeated simulation

Examples

```
simdat <- simulater(
  const = c("var_cost 5", "fixed_cost 1000"),
  norm = "E 0 100;",
  discrete = "price 6 8 .3 .7;",
  form = c(
    "demand = 1000 - 50*price + E",
    "profit = demand*(price-var_cost) - fixed_cost",
    "profit_small = profit < 100"
  ),
  seed = 1234
)

repdat <- repeater(
  simdat,
  nr = 12,
  vars = c("E", "price"),
  sum_vars = "profit",
  byvar = ".sim",
  form = "profit_365 = profit_sum < 36500",
  seed = 1234,
)

head(repdat)
summary(repdat)
plot(repdat)
```

`rforest` *Random Forest using Ranger*

Description

Random Forest using Ranger

Usage

```
rforest(
  dataset,
  rvar,
  evar,
  type = "classification",
  lev = "",
  mtry = NULL,
  num.trees = 100,
  min.node.size = 1,
  sample.fraction = 1,
  replace = NULL,
  num.threads = 12,
```

```
  wts = "None",
  seed = NA,
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame(),
  ...
)
```

Arguments

dataset	Dataset
rvar	The response variable in the model
evar	Explanatory variables in the model
type	Model type (i.e., "classification" or "regression")
lev	Level to use as the first column in prediction output
mtry	Number of variables to possibly split at in each node. Default is the (rounded down) square root of the number variables
num.trees	Number of trees to create
min.node.size	Minimal node size
sample.fraction	Fraction of observations to sample. Default is 1 for sampling with replacement and 0.632 for sampling without replacement
replace	Sample with (TRUE) or without (FALSE) replacement. If replace is NULL it will be reset to TRUE if the sample.fraction is equal to 1 and will be set to FALSE otherwise
num.threads	Number of parallel threads to use. Defaults to 12 if available
wts	Case weights to use in estimation
seed	Random seed to use as the starting point
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from
...	Further arguments to pass to ranger

Details

See https://radiant-rstats.github.io/docs/model/rforest.html for an example in Radiant

Value

A list with all variables defined in rforest as an object of class rforest

See Also

summary.rforest to summarize results

plot.rforest to plot results

predict.rforest for prediction

Examples

```
rforest(titanic, "survived", c("pclass", "sex"), lev = "Yes") %>% summary()
rforest(titanic, "survived", c("pclass", "sex")) %>% str()
rforest(titanic, "survived", c("pclass", "sex"), max.depth = 1)
rforest(diamonds, "price", c("carat", "clarity"), type = "regression") %>% summary()
```

---

rig *Relative Information Gain (RIG)*

Description

Relative Information Gain (RIG)

Usage

```
rig(pred, rvar, lev, crv = 1e-07, na.rm = TRUE)
```

Arguments

pred	Prediction or predictor
rvar	Response variable
lev	The level in the response variable defined as success
crv	Correction value to avoid log(0)
na.rm	Logical that indicates if missing values should be removed (TRUE) or not (FALSE)

Details

See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

Value

RIG statistic

See Also

evalbin to calculate results

summary.evalbin to summarize results

plot.evalbin to plot results

Examples

```
rig(runif(20000), dvd$buy, "yes")
rig(ifelse(dvd$buy == "yes", 1, 0), dvd$buy, "yes")
```

RMSE *Root Mean Squared Error*

Description

Root Mean Squared Error

Usage

```
RMSE(pred, rvar)
```

Arguments

pred	Prediction (vector)
rvar	Response (vector)

Value

Root Mean Squared Error

Rsq *R-squared*

Description

R-squared

Usage

```
Rsq(pred, rvar)
```

Arguments

pred	Prediction (vector)
rvar	Response (vector)

Value

R-squared

scale_df *Center or standardize variables in a data frame*

Description

Center or standardize variables in a data frame

Usage

```
scale_df(dataset, center = TRUE, scale = TRUE, sf = 2, wts = NULL, calc = TRUE)
```

Arguments

dataset	Data frame
center	Center data (TRUE or FALSE)
scale	Scale data (TRUE or FALSE)
sf	Scaling factor (default is 2)
wts	Weights to use (default is NULL for no weights)
calc	Calculate mean and sd or use attributes attached to dat

Value

Scaled data frame

sdw *Standard deviation of weighted sum of variables*

Description

Standard deviation of weighted sum of variables

Usage

```
sdw(...)
```

Arguments

...	A matched number of weights and stocks

Value

A vector of standard deviation estimates

sensitivity *Method to evaluate sensitivity of an analysis*

Description

Method to evaluate sensitivity of an analysis

Usage

```
sensitivity(object, ...)
```

Arguments

object	Object of relevant class for which to evaluate sensitivity
...	Additional arguments

See Also

sensitivity.dtree to plot results

sensitivity.dtree *Evaluate sensitivity of the decision tree*

Description

Evaluate sensitivity of the decision tree

Usage

```
## S3 method for class 'dtree'
sensitivity(
  object,
  vars = NULL,
  decs = NULL,
  envir = parent.frame(),
  shiny = FALSE,
  custom = FALSE,
  ...
)
```

Arguments

object	Return value from dtree
vars	Variables to include in the sensitivity analysis
decs	Decisions to include in the sensitivity analysis
envir	Environment to extract data from
shiny	Did the function call originate inside a shiny app
custom	Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org for options.
...	Additional arguments

Details

See https://radiant-rstats.github.io/docs/model/dtree.html for an example in Radiant

See Also

dtree to generate the result

plot.dtree to summarize results

summary.dtree to summarize results

Examples

```
dtree(movie_contract, opt = "max") %>%
  sensitivity(
    vars = "legal fees 0 100000 10000",
    decs = c("Sign with Movie Company", "Sign with TV Network"),
    custom = FALSE
  )
```

---

simulater *Simulate data for decision analysis*

Description

Simulate data for decision analysis

Usage

```
simulater(
  const = "",
  lnorm = "",
  norm = "",
  unif = "",
  discrete = "",
  binom = "",
  pois = "",
  sequ = "",
  grid = "",
  data = NULL,
  form = "",
  funcs = "",
  seed = NULL,
  nexact = FALSE,
  ncorr = NULL,
  name = "",
  nr = 1000,
  dataset = NULL,
  envir = parent.frame()
)
```

Arguments

const	A character vector listing the constants to include in the analysis (e.g., c("cost = 3", "size = 4"))
lnorm	A character vector listing the log-normally distributed random variables to include in the analysis (e.g., "demand 2000 1000" where the first number is the log-mean and the second is the log-standard deviation)
norm	A character vector listing the normally distributed random variables to include in the analysis (e.g., "demand 2000 1000" where the first number is the mean and the second is the standard deviation)
unif	A character vector listing the uniformly distributed random variables to include in the analysis (e.g., "demand 0 1" where the first number is the minimum value and the second is the maximum value)
discrete	A character vector listing the random variables with a discrete distribution to include in the analysis (e.g., "price 5 8 .3 .7" where the first set of numbers are the values and the second set the probabilities
binom	A character vector listing the random variables with a binomial distribution to include in the analysis (e.g., "crash 100 .01") where the first number is the number of trials and the second is the probability of success)
pois	A character vector listing the random variables with a poisson distribution to include in the analysis (e.g., "demand 10") where the number is the lambda value (i.e., the average number of events or the event rate)

sequ	A character vector listing the start and end for a sequence to include in the analysis (e.g., "trend 1 100 1"). The number of 'steps' is determined by the number of simulations
grid	A character vector listing the start, end, and step for a set of sequences to include in the analysis (e.g., "trend 1 100 1"). The number of rows in the expanded will over ride the number of simulations
data	Dataset to be used in the calculations
form	A character vector with the formula to evaluate (e.g., "profit = demand * (price - cost)")
funcs	A named list of user defined functions to apply to variables generated as part of the simulation
seed	Optional seed used in simulation
nexact	Logical to indicate if normally distributed random variables should be simulated to the exact specified values
ncorr	A string of correlations used for normally distributed random variables. The number of values should be equal to one or to the number of combinations of variables simulated
name	Deprecated argument
nr	Number of simulations
dataset	Data list from previous simulation. Used by repeater function
envir	Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/model/simulater.html for an example in Radiant

Value

A data.frame with the simulated data

See Also

summary.simulater to summarize results

plot.simulater to plot results

Examples

```
simulater(
  const = "cost 3",
  norm = "demand 2000 1000",
  discrete = "price 5 8 .3 .7",
  form = "profit = demand * (price - cost)",
  seed = 1234
) %>% str()
```

sim_cleaner *Clean input command string*

Description

Clean input command string

Usage

```
sim_cleaner(x)
```

Arguments

x	Input string

Value

Cleaned string

sim_cor *Simulate correlated normally distributed data*

Description

Simulate correlated normally distributed data

Usage

```
sim_cor(n, rho, means, sds, exact = FALSE)
```

Arguments

n	The number of values to simulate (i.e., the number of rows in the simulated data)
rho	A vector of correlations to apply to the columns of the simulated data. The number of values should be equal to one or to the number of combinations of variables to be simulated
means	A vector of means. The number of values should be equal to the number of variables to simulate
sds	A vector of standard deviations. The number of values should be equal to the number of variables to simulate
exact	A logical that indicates if the inputs should be interpreted as population of sample characteristics

Value

A data.frame with the simulated data

Examples

```
sim <- sim_cor(100, .74, c(0, 10), c(1, 5), exact = TRUE)
cor(sim)
sim_summary(sim)
```

---

sim_splitter *Split input command string*

Description

Split input command string

Usage

```
sim_splitter(x, symbol = " ")
```

Arguments

x	Input string
symbol	Symbol used to split the command string

Value

Split input command string

---

sim_summary *Print simulation summary*

Description

Print simulation summary

Usage

```
sim_summary(dataset, dc = get_class(dataset), fun = "", dec = 4)
```

Arguments

dataset	Simulated data
dc	Variable classes
fun	Summary function to apply
dec	Number of decimals to show

See Also

simulater to run a simulation

repeater to run a repeated simulation

Examples

```
simulater(
  const = "cost 3",
  norm = "demand 2000 1000",
  discrete = "price 5 8 .3 .7",
  form = c("profit = demand * (price - cost)", "profit5K = profit > 5000"),
  seed = 1234
) %>% sim_summary()
```

---

store.crs *Deprecated: Store method for the crs function*

Description

Deprecated: Store method for the crs function

Usage

```
## S3 method for class 'crs'
store(dataset, object, name, ...)
```

Arguments

dataset	Dataset
object	Return value from crs
name	Name to assign to the dataset
...	further arguments passed to or from other methods

Details

Return recommendations See https://radiant-rstats.github.io/docs/model/crs.html for an example in Radiant

store.mnl.predict *Store predicted values generated in the mnl function*

Description

Store predicted values generated in the mnl function

Usage

```
## S3 method for class 'mnl.predict'
store(dataset, object, name = NULL, ...)
```

Arguments

dataset	Dataset to add predictions to
object	Return value from model function
name	Variable name(s) assigned to predicted values. If empty, the levels of the response variable will be used
...	Additional arguments

Details

See https://radiant-rstats.github.io/docs/model/mnl.html for an example in Radiant

Examples

```
result <- mnl(
  ketchup,
  rvar = "choice",
  evar = c("price.heinz28", "price.heinz32", "price.heinz41", "price.hunts32"),
  lev = "heinz28"
)
pred <- predict(result, pred_data = ketchup)
ketchup <- store(ketchup, pred, name = c("heinz28", "heinz32", "heinz41", "hunts32"))
```

store.model *Store residuals from a model*

Description

Store residuals from a model

Usage

```
## S3 method for class 'model'
store(dataset, object, name = "residuals", ...)
```

Arguments

dataset	Dataset to append residuals to
object	Return value from a model function
name	Variable name(s) assigned to model residuals
...	Additional arguments

Details

The store method for objects of class "model". Adds model residuals to the dataset while handling missing values and filters. See https://radiant-rstats.github.io/docs/model/regress.html for an example in Radiant

Examples

```
regress(diamonds, rvar = "price", evar = c("carat", "cut"), data_filter = "price > 1000") %>%
  store(diamonds, ., name = "resid") %>%
  head()
```

---

store.model.predict *Store predicted values generated in model functions*

Description

Store predicted values generated in model functions

Usage

```
## S3 method for class 'model.predict'
store(dataset, object, name = "prediction", ...)
```

Arguments

dataset	Dataset to add predictions to
object	Return value from model function
name	Variable name(s) assigned to predicted values
...	Additional arguments

Details

See https://radiant-rstats.github.io/docs/model/regress.html for an example in Radiant

Examples

```
regress(diamonds, rvar = "price", evar = c("carat", "cut")) %>%
  predict(pred_data = diamonds) %>%
  store(diamonds, ., name = c("pred", "pred_low", "pred_high")) %>%
  head()
```

`store.nb.predict` *Store predicted values generated in the nb function*

Description

Store predicted values generated in the nb function

Usage

```
## S3 method for class 'nb.predict'
store(dataset, object, name = NULL, ...)
```

Arguments

`dataset`	Dataset to add predictions to
`object`	Return value from model function
`name`	Variable name(s) assigned to predicted values. If empty, the levels of the response variable will be used
`...`	Additional arguments

Details

See https://radiant-rstats.github.io/docs/model/nb.html for an example in Radiant

Examples

```
result <- nb(titanic, rvar = "survived", evar = c("pclass", "sex", "age"))
pred <- predict(result, pred_data = titanic)
titanic <- store(titanic, pred, name = c("Yes", "No"))
```

store.rforest.predict *Store predicted values generated in the rforest function*

Description

Store predicted values generated in the rforest function

Usage

```
## S3 method for class 'rforest.predict'
store(dataset, object, name = NULL, ...)
```

Arguments

dataset	Dataset to add predictions to
object	Return value from model function
name	Variable name(s) assigned to predicted values. If empty, the levels of the response variable will be used
...	Additional arguments

Details

See https://radiant-rstats.github.io/docs/model/rforest.html for an example in Radiant

Examples

```
result <- rforest(
  ketchup,
  rvar = "choice",
  evar = c("price.heinz28", "price.heinz32", "price.heinz41", "price.hunts32"),
  lev = "heinz28"
)
pred <- predict(result, pred_data = ketchup)
ketchup <- store(ketchup, pred, name = c("heinz28", "heinz32", "heinz41", "hunts32"))
```

summary.confusion *Summary method for the confusion matrix*

Description

Summary method for the confusion matrix

Usage

```
## S3 method for class 'confusion'
summary(object, dec = 3, ...)
```

Arguments

object	Return value from confusion
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

See Also

confusion to generate results

plot.confusion to visualize result

Examples

```
data.frame(buy = dvd$buy, pred1 = runif(20000), pred2 = ifelse(dvd$buy == "yes", 1, 0)) %>%
  confusion(c("pred1", "pred2"), "buy") %>%
  summary()
```

---

summary.crs *Summary method for Collaborative Filter*

Description

Summary method for Collaborative Filter

Usage

```
## S3 method for class 'crs'
summary(object, n = 36, dec = 2, ...)
```

Arguments

object	Return value from crs
n	Number of lines of recommendations to print. Use -1 to print all lines
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/crs.html for an example in Radiant

See Also

crs to generate the results

plot.crs to plot results if the actual ratings are available

Examples

```
crs(ratings,
  id = "Users", prod = "Movies", pred = c("M6", "M7", "M8", "M9", "M10"),
  rate = "Ratings", data_filter = "training == 1"
) %>% summary()
```

---

summary.crtree *Summary method for the crtree function*

Description

Summary method for the crtree function

Usage

```
## S3 method for class 'crtree'
summary(object, prn = TRUE, splits = FALSE, cptab = FALSE, modsum = FALSE, ...)
```

Arguments

object	Return value from crtree
prn	Print tree in text form
splits	Print the tree splitting metrics used
cptab	Print the cp table
modsum	Print the model summary
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/crtree.html for an example in Radiant

See Also

crtree to generate results

plot.crtree to plot results

predict.crtree for prediction

Examples

```
result <- crtree(titanic, "survived", c("pclass", "sex"), lev = "Yes")
summary(result)
result <- crtree(diamonds, "price", c("carat", "color"), type = "regression")
summary(result)
```

---

summary.dtree *Summary method for the dtree function*

Description

Summary method for the dtree function

Usage

```
## S3 method for class 'dtree'
summary(object, input = TRUE, output = FALSE, dec = 2, ...)
```

Arguments

object	Return value from simulater
input	Print decision tree input
output	Print decision tree output
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/dtree.html for an example in Radiant

See Also

dtree to generate the results

plot.dtree to plot results

sensitivity.dtree to plot results

Examples

```
dtree(movie_contract, opt = "max") %>% summary(input = TRUE)
dtree(movie_contract, opt = "max") %>% summary(input = FALSE, output = TRUE)
```

summary.evalbin *Summary method for the evalbin function*

Description

Summary method for the evalbin function

Usage

```
## S3 method for class 'evalbin'
summary(object, prn = TRUE, dec = 3, ...)
```

Arguments

object	Return value from evalbin
prn	Print full table of measures per model and bin
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

See Also

evalbin to summarize results

plot.evalbin to plot results

Examples

```
data.frame(buy = dvd$buy, pred1 = runif(20000), pred2 = ifelse(dvd$buy == "yes", 1, 0)) %>%
  evalbin(c("pred1", "pred2"), "buy") %>%
  summary()
```

summary.evalreg *Summary method for the evalreg function*

Description

Summary method for the evalreg function

Usage

```
## S3 method for class 'evalreg'
summary(object, dec = 3, ...)
```

Arguments

object	Return value from evalreg
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/evalreg.html for an example in Radiant

See Also

evalreg to summarize results

plot.evalreg to plot results

Examples

```
data.frame(price = diamonds$price, pred1 = rnorm(3000), pred2 = diamonds$price) %>%
  evalreg(pred = c("pred1", "pred2"), "price") %>%
  summary()
```

summary.gbt *Summary method for the gbt function*

Description

Summary method for the gbt function

Usage

```
## S3 method for class 'gbt'
summary(object, prn = TRUE, ...)
```

Arguments

object	Return value from gbt
prn	Print iteration history
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/gbt.html for an example in Radiant

See Also

gbt to generate results

plot.gbt to plot results

predict.gbt for prediction

Examples

```
result <- gbt(
  titanic, "survived", c("pclass", "sex"),
  early_stopping_rounds = 0, nthread = 1
)
summary(result)
```

---

summary.logistic *Summary method for the logistic function*

Description

Summary method for the logistic function

Usage

```
## S3 method for class 'logistic'
summary(object, sum_check = "", conf_lev = 0.95, test_var = "", dec = 3, ...)
```

Arguments

object	Return value from logistic
sum_check	Optional output. "vif" to show multicollinearity diagnostics. "confint" to show coefficient confidence interval estimates. "odds" to show odds ratios and confidence interval estimates.
conf_lev	Confidence level to use for coefficient and odds confidence intervals (.95 is the default)
test_var	Variables to evaluate in model comparison (i.e., a competing models Chi-squared test)
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/logistic.html for an example in Radiant

See Also

logistic to generate the results

plot.logistic to plot the results

predict.logistic to generate predictions

plot.model.predict to plot prediction output

Examples

```
result <- logistic(titanic, "survived", "pclass", lev = "Yes")
result <- logistic(titanic, "survived", "pclass", lev = "Yes")
summary(result, test_var = "pclass")
res <- logistic(titanic, "survived", c("pclass", "sex"), int = "pclass:sex", lev = "Yes")
summary(res, sum_check = c("vif", "confint", "odds"))
titanic %>%
  logistic("survived", c("pclass", "sex", "age"), lev = "Yes") %>%
  summary("vif")
```

---

summary.mnl *Summary method for the mnl function*

Description

Summary method for the mnl function

Usage

```
## S3 method for class 'mnl'
summary(object, sum_check = "", conf_lev = 0.95, test_var = "", dec = 3, ...)
```

Arguments

object	Return value from mnl
sum_check	Optional output. "confint" to show coefficient confidence interval estimates. "rrr" to show relative risk ratios (RRRs) and confidence interval estimates.
conf_lev	Confidence level to use for coefficient and RRRs confidence intervals (.95 is the default)
test_var	Variables to evaluate in model comparison (i.e., a competing models Chi-squared test)
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/mnl.html for an example in Radiant

See Also

mnl to generate the results

plot.mnl to plot the results

predict.mnl to generate predictions

plot.model.predict to plot prediction output

Examples

```
result <- mnl(
  ketchup,
  rvar = "choice",
  evar = c("price.heinz28", "price.heinz32", "price.heinz41", "price.hunts32"),
  lev = "heinz28"
)
summary(result)
```

---

summary.nb *Summary method for the nb function*

Description

Summary method for the nb function

Usage

```
## S3 method for class 'nb'
summary(object, dec = 3, ...)
```

Arguments

object	Return value from nb
dec	Decimals
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/nb.html for an example in Radiant

See Also

nb to generate results

plot.nb to plot results

predict.nb for prediction

Examples

```
result <- nb(titanic, "survived", c("pclass", "sex", "age"))
summary(result)
```

---

summary.nn *Summary method for the nn function*

Description

Summary method for the nn function

Usage

```
## S3 method for class 'nn'
summary(object, prn = TRUE, ...)
```

Arguments

object	Return value from nn
prn	Print list of weights
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/nn.html for an example in Radiant

See Also

nn to generate results

plot.nn to plot results

predict.nn for prediction

Examples

```
result <- nn(titanic, "survived", "pclass", lev = "Yes")
summary(result)
```

summary.regress *Summary method for the regress function*

Description

Summary method for the regress function

Usage

```
## S3 method for class 'regress'
summary(object, sum_check = "", conf_lev = 0.95, test_var = "", dec = 3, ...)
```

Arguments

object	Return value from regress
sum_check	Optional output. "rsme" to show the root mean squared error and the standard deviation of the residuals. "sumsquares" to show the sum of squares table. "vif" to show multicollinearity diagnostics. "confint" to show coefficient confidence interval estimates.
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
test_var	Variables to evaluate in model comparison (i.e., a competing models F-test)
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/regress.html for an example in Radiant

See Also

regress to generate the results

plot.regress to plot results

predict.regress to generate predictions

Examples

```
result <- regress(diamonds, "price", c("carat", "clarity"))
summary(result, sum_check = c("rmse", "sumsquares", "vif", "confint"), test_var = "clarity")
result <- regress(ideal, "y", c("x1", "x2"))
summary(result, test_var = "x2")
ideal %>%
  regress("y", "x1:x3") %>%
  summary()
```

summary.repeater *Summarize repeated simulation*

Description

Summarize repeated simulation

Usage

```
## S3 method for class 'repeater'
summary(object, dec = 4, ...)
```

Arguments

object	Return value from repeater
dec	Number of decimals to show
...	further arguments passed to or from other methods

See Also

repeater to run a repeated simulation

plot.repeater to plot results from repeated simulation

summary.rforest *Summary method for the rforest function*

Description

Summary method for the rforest function

Usage

```
## S3 method for class 'rforest'
summary(object, ...)
```

Arguments

object	Return value from rforest
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/rforest.html for an example in Radiant

See Also

rforest to generate results

plot.rforest to plot results

predict.rforest for prediction

Examples

```
result <- rforest(titanic, "survived", "pclass", lev = "Yes")
summary(result)
```

---

summary.simulater *Summary method for the simulater function*

Description

Summary method for the simulater function

Usage

```
## S3 method for class 'simulater'
summary(object, dec = 4, ...)
```

Arguments

object	Return value from simulater
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/simulater.html for an example in Radiant

See Also

simulater to generate the results

plot.simulater to plot results

Examples

```
simdat <- simulater(norm = "demand 2000 1000", seed = 1234)
summary(simdat)
```

summary.uplift *Summary method for the uplift function*

Description

Summary method for the uplift function

Usage

```
## S3 method for class 'uplift'
summary(object, prn = TRUE, dec = 3, ...)
```

Arguments

object	Return value from evalbin
prn	Print full table of measures per model and bin
dec	Number of decimals to show
...	further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

See Also

evalbin to summarize results

plot.evalbin to plot results

Examples

```
data.frame(buy = dvd$buy, pred1 = runif(20000), pred2 = ifelse(dvd$buy == "yes", 1, 0)) %>%
  evalbin(c("pred1", "pred2"), "buy") %>%
  summary()
```

test_specs *Add interaction terms to list of test variables if needed*

Description

Add interaction terms to list of test variables if needed

Usage

```
test_specs(tv, int)
```

Arguments

tv	List of variables to use for testing for regress or logistic
int	Interaction terms specified

Details

See https://radiant-rstats.github.io/docs/model/regress.html for an example in Radiant

Value

A vector of variables names to test

Examples

```
test_specs("a", "a:b")
test_specs("a", c("a:b", "b:c"))
test_specs("a", c("a:b", "b:c", "I(c^2)"))
test_specs(c("a", "b", "c"), c("a:b", "b:c", "I(c^2)"))
```

uplift *Evaluate uplift for different (binary) classification models*

Description

Evaluate uplift for different (binary) classification models

Usage

```
uplift(
  dataset,
  pred,
  rvar,
  lev = "",
  tvar,
  tlev = "",
  qnt = 10,
  cost = 1,
  margin = 2,
  scale = 1,
  train = "All",
  data_filter = "",
  arr = "",
  rows = NULL,
  envir = parent.frame()
)
```

Arguments

dataset	Dataset
pred	Predictions or predictors
rvar	Response variable
lev	The level in the response variable defined as success
tvar	Treatment variable
tlev	The level in the treatment variable defined as the treatment
qnt	Number of bins to create
cost	Cost for each connection (e.g., email or mailing)
margin	Margin on each customer purchase
scale	Scaling factor to apply to calculations
train	Use data from training ("Training"), test ("Test"), both ("Both"), or all data ("All") to evaluate model evalbin
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
arr	Expression to arrange (sort) the data on (e.g., "color, desc(price)")
rows	Rows to select from the specified dataset
envir	Environment to extract data from

Details

Evaluate uplift for different (binary) classification models based on predictions. See https://radiant-rstats.github.io/docs/model/evalbin.html for an example in Radiant

Value

A list of results

See Also

summary.evalbin to summarize results

plot.evalbin to plot results

Examples

```
data.frame(buy = dvd$buy, pred1 = runif(20000), pred2 = ifelse(dvd$buy == "yes", 1, 0)) %>%
  evalbin(c("pred1", "pred2"), "buy") %>%
  str()
```

---

varimp *Variable importance using the vip package and permutation importance*

Description

Variable importance using the vip package and permutation importance

Usage

```
varimp(object, rvar, lev, data = NULL, seed = 1234)
```

Arguments

object	Model object created by Radiant
rvar	Label to identify the response or target variable
lev	Reference class for binary classifier (rvar)
data	Data to use for prediction. Will default to the data used to estimate the model
seed	Random seed for reproducibility

varimp_plot *Plot permutation importance*

Description

Plot permutation importance

Usage

```
varimp_plot(object, rvar, lev, data = NULL, seed = 1234)
```

Arguments

object	Model object created by Radiant
rvar	Label to identify the response or target variable
lev	Reference class for binary classifier (rvar)
data	Data to use for prediction. Will default to the data used to estimate the model
seed	Random seed for reproducibility

var_check *Check if main effects for all interaction effects are included in the model*

Description

Check if main effects for all interaction effects are included in the model

Usage

```
var_check(ev, cn, intv = c())
```

Arguments

ev	List of explanatory variables provided to regress or logistic
cn	Column names for all explanatory variables in the dataset
intv	Interaction terms specified

Details

If ':' is used to select a range evar is updated. See https://radiant-rstats.github.io/docs/model/regress.html for an example in Radiant

Value

vars is a vector of right-hand side variables, possibly with interactions, iv is the list of explanatory variables, and intv are interaction terms

Examples

```
var_check("a:d", c("a", "b", "c", "d"))
var_check(c("a", "b"), c("a", "b"), "a:c")
var_check(c("a", "b"), c("a", "b"), "a:c")
var_check(c("a", "b"), c("a", "b"), c("a:c", "I(b^2)"))
```

---

write.coeff *Write coefficient table for linear and logistic regression*

Description

Write coefficient table for linear and logistic regression

Usage

```
write.coeff(object, file = "", sort = FALSE, intercept = TRUE)
```

Arguments

object	A fitted model object of class regress or logistic
file	A character string naming a file. "" indicates output to the console
sort	Sort table by variable importance
intercept	Include the intercept in the output (TRUE or FALSE). TRUE is the default

Details

Write coefficients and importance scores to csv or or return as a data.frame

Examples

```
regress(
  diamonds,
  rvar = "price", evar = c("carat", "clarity", "color", "x"),
  int = c("carat:clarity", "clarity:color", "I(x^2)"), check = "standardize"
) %>%
  write.coeff(sort = TRUE) %>%
  format_df(dec = 3)

logistic(titanic, "survived", c("pclass", "sex"), lev = "Yes") %>%
  write.coeff(intercept = FALSE, sort = TRUE) %>%
  format_df(dec = 2)
```

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