Package ‘predReliability’

July 7, 2020

Title Estimates Reliability of Individual Supervised Learning Predictions

Version 0.1.0

Description An implementation of reliability estimation methods described in the paper (Bosnic, Z., & Kononenko, I. (2008) <doi:10.1007/s10489-007-0084-9>), which allows you to test the reliability of a single predicted instance made by your model and prediction function. It also allows you to make a correlation test to estimate which reliability estimate is the most accurate for your model.

Depends R (>= 3.3.2)

Imports parallel, cluster, rpart

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

NeedsCompilation no

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A reliability function

**Description**

A function used to calculate the reliability of individual predictions given by your model and prediction function with methods described in the paper (Bosnic, Z., & Kononenko, I. (2008) <doi:10.1007/s10489-007-0084-9>). It also allows you to make a correlation test to estimate which reliability estimate is the most accurate for your model.

**Usage**

```r
predReliability(
  data.test, 
  data.train, 
  types, 
  formula, 
  model.function, 
  predict.function, 
  ceval = F, 
  nThread = 1, 
  ...
)
```

**Arguments**

- `data.test`: a `data.frame` object used as the testing data for your prediction model
- `data.train`: a `data.frame` object used as the training data for your prediction model
- `types`: a `vector` of reliability test types you want to perform c("bagv", "cnk", "lcv", "sa")
- `formula`: a `formula` describing the model to be fitted
- `model.function`: a function with arguments `formula` and `data.frame` implementing the predictive model to be evaluated. The function model must return an object representing a fitted model.
- `predict.function`: a function with arguments model object `data.frame` of testing instances that will be predicted based on the given model.
- `ceval`: a flag whether a 10-fold correlation test should be made on the requested types (default set to false)
- `nThread`: the number
- `...`: extra arguments you wish to be passed to your model and prediction function
References


Examples

```r
estimates <- c("bagv", "cnk", "lcv", "sa")
predReliability(mtcars[1,], mtcars[-1,], estimates, mpg~, rpart::rpart, predict)
```
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