# Package 'predReliability'

July 23, 2025

**Title** Estimates Reliability of Individual Supervised Learning
Predictions

**Version** 0.1.0

**Description** An implementation of reliability estimation methods described in the pa-
per (Bosnic, Z., & Kononenko, I. (2008) <doi:10.1007/s10489-007-0084-9>), which al-
lows 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 esti-
mate 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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**Repository** CRAN

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predReliability        *A reliability function*

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### 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

```
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 onject 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**

Bosnic, Z., & Kononenko, I. (2008). Comparison of approaches for estimating reliability of individual regression predictions. Data & Knowledge Engineering, 67(3), 504-516. Bosnic, Z., & Kononenko, I. (2008). Estimation of individual prediction reliability using the local sensitivity analysis. Applied intelligence, 29(3), 187-203. Bosnic, Z., & Kononenko, I. (2009). An overview of advances in reliability estimation of individual predictions in machine learning. Intelligent Data Analysis, 13(2), 385-401.

**Examples**

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

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