Package: TLIC (via r-universe)

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Type Package

Title The LIC for T Distribution Regression Analysis

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Description This comprehensive toolkit for T-distributed regression is designated as ``TLIC'' (The LIC for T Distribution Regression Analysis) analysis. It is predicated on the assumption that the error term adheres to a T-distribution. The philosophy of the package is described in Guo G. (2020) <doi:10.1080/02664763.2022.2053949>.

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Encoding UTF-8

RoxygenNote 7.3.2

Imports stats, LaplacesDemon, fBasics

NeedsCompilation no

Author Guangbao Guo [aut, cre] (<https://orcid.org/0000-0002-4115-6218>), Guofu Jing [aut]

Maintainer Guangbao Guo <ggb11111111@163.com>

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terr — *terr function is used to generate a dataset where the error term follows a T-distribution*

Description

This terr function generates a dataset with a specified number of observations and predictors, along with a response vector that has an error term following a T-distribution.

Usage

```
terr(n, nr, p, dist_type, ...)
```

Arguments

n	is the number of observations
nr	is the number of observations with a different error T distribution
p	is the dimension of the observation
dist_type	is the type where the error term obeys a T-distribution
...	is additional arguments for the T-distribution function

Value

X,Y,e

Examples

```
set.seed(12)
data <- terr(n = 1200, nr = 200, p = 5, dist_type = "student_t")
str(data)
```

TLIC — *TLIC function based on LIC with T-distributed errors*

Description

The TLIC function builds on the LIC function by introducing the assumption that the error term follows a T-distribution, thereby enhancing the length and information optimisation criterion.

Usage

```
TLIC(X, Y, alpha = 0.05, K = 10, nk = NULL, dist_type = "student_t")
```

Arguments

X	is a design matrix
Y	is a random response vector of observed values
alpha	is the significance level
K	is the number of subsets
nk	is the sample size of subsets
dist_type	is the type where the error term obeys a T-distribution

Value

MUopt, Bopt, MAEMUopt, MSEMUopt, opt, Yopt

Examples

```
set.seed(12)
n <- 1200
nr <- 200
p <- 5
data <- terr(n, nr, p, dist_type = "student_t")
TLIC(data$X, data$Y, alpha = 0.05, K = 10, nk = n / 10, dist_type = "student_t")
```

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