Package 'UniExactFunTest'

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Type Package

Title Uniform Exact Functional Tests for Contingency Tables

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Description Testing whether two discrete variables have a functional relationship under null distributions where the two variables are statistically independent with fixed marginal counts. The fast enumeration algorithm was based on (Nguyen et al. 2020) <doi:10.24963/ijcai.2020/372>.

License LGPL (>= 3)

Encoding UTF-8

Imports Rcpp (>= 1.0.5)

LinkingTo Rcpp

Depends R (>= 3.5.0), stats

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

VignetteBuilder knitr

Config/testthat/edition 3

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UEFT *Uniform Exact Functional Test on Two Discrete Random Variables*

Description

Perform the uniform exact functional test on a contingency table to determine if the column variable is a function of the row variable.

Usage

```
UEFT(input, correct, log.p)
```

Arguments

input	A matrix of nonnegative integers representing a contingency table. Column is the casual and row is the effect.
correct	Logical; if implement the continuity correction. The description is at details. The default is TRUE.
log.p	Logical; if TRUE, the p-value is given as log(p). The default is FALSE. The default is FALSE.

Details

The uniform idea was implementated using uniform marginal distribution of a square table as null hypothesis.

Value

The exact p-value of the test.

Note

The functions provide a direct entry into the C++ implementations of the exact functional test.

Author(s)

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Examples

```
# Initial a table
x = matrix(c(0,5,10,0,0,5), ncol=3)
# With continuity correction
UEFT(x)
# Without continuity correction
UEFT(x, FALSE)
```

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