Package ‘fastlogranktest’

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Type Package

Title A Fast Way to Calculate the p-Value of One or Multiple Log-Rank-Tests

Version 0.2.1

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Description A very fast Log-Rank-Test implementation that is several orders of magnitude faster than the implementation in the ‘survival’ package. Log-Rank-Tests can be computed individually or concurrently using threading.

License GPL-3

URL https://github.com/compsysmed/fastlogranktest.git

Encoding UTF-8

LazyData true

RoxygenNote 7.0.2

LinkingTo Rcpp, BH

Imports Rcpp

Suggests testthat (>= 2.1.0), survival (>= 3.1)

NeedsCompilation yes

Repository CRAN

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logrank_test  
*Calculate the Log-Rank-Test very fast*

**Description**

Calculate the Log-Rank-Test very fast

**Usage**

logrank_test(groupa, groupb, groupacensored, groupbcensored, onlyz = FALSE)

**Arguments**

- `groupa`: vector of group a’s survival times
- `groupb`: vector of group b’s survival times
- `groupacensored`: vector of censored information of group a’s survival times
- `groupbcensored`: vector of censored information of group b’s survival times
- `onlyz`: (optional) calculate only z-statistic

**Value**

chi2 statistic, z-statistic, p-value

**Examples**

```r
t1 <- c(6, 6, 6, 7, 9, 10, 10, 11, 13, 16, 17, 19, 20, 22, 23, 25, 32, 32, 34, 35)
et1 <- c(1, 1, 1, 0, 1, 0, 1, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 0)
t2 <- c(1, 1, 2, 2, 3, 4, 4, 5, 5, 8, 8, 8, 8, 11, 11, 12, 12, 15, 17, 22, 23)
et2 <- c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)
logrank_test(t1, t2, e1, e2)
#1.679294e+01 -4.097919e+00, 4.168809e-05
```

multi_logrank_test  
*Calculate multiple Log-Rank-Tests very fast*

**Description**

Calculate multiple Log-Rank-Tests very fast
**Usage**

```r
multi_logrank_test(
  groupas,
  groupbs,
  groupacensoreds,
  groupbcensoreds,
  threadnumber = NULL,
  onlyz = FALSE
)
```

**Arguments**

- `groupas`: list of vectors of groupa's survival times
- `groupbs`: list of vectors of groupb's survival times
- `groupacensoreds`: list of vectors of censored information of groupa's survival times
- `groupbcensoreds`: list of vectors of censored information of groupb's survival times
- `threadnumber` (optional): set the number of threads used for this function
- `onlyz` (optional): calculate only z-statistic

**Value**

vector of chi2 statistic, z-statistic, p-value (same order as input)

**Examples**

```r
T1 <- c(6, 6, 6, 7, 9, 10, 11, 13, 16, 17, 19, 20, 22, 23, 25, 32, 32, 34, 35)
E1 <- c(1, 1, 0, 1, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0)
T2 <- c(1, 1, 2, 3, 4, 5, 8, 8, 8, 8, 11, 11, 12, 15, 17, 22, 23)
E2 <- c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)
t1s<-list(T1, T1, T1)
e1s<-list(E1, E1, E1)
t2s<-list(T2, T2, T2)
e2s<-list(E2, E2, E2)
multi_logrank_test(t1s, t2s, e1s, e2s)
# 1.679294e+01 -4.097919e+00 4.168809e-05
# 1.679294e+01 -4.097919e+00 4.168809e-05
```
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