Package 'DTAXG'

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Type Package

Title Diagnostic Test Assessment in the Absence of Gold Standard

Version 0.1.0

Author Zhicheng Du, Yuantao Hao

Maintainer Zhicheng Du <dgdzc@hotmail.com>

Description To calculate the sensitivity and specificity in the absence of gold standard using the Bayesian method.
The Bayesian method can be referenced at Haiyan Gu and Qiguang Chen (1999) <doi:10.3969/j.issn.1002-3674.1999.04.004>.

License GPL-3

Encoding UTF-8

LazyData true

Imports stats

NeedsCompilation no

Repository CRAN

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DTAXG2 *Two Diagnostic Tests Assessment in the Absence of Gold Standard*

Description

To calculate the sensitivity and specificity for two diagnostic tests in the absence of gold standard using the Bayesian method. The prior information of sensitivity and specificity must be provided.

Usage

```
DTAXG2(group1,group2,
    prior.se.group1,prior.sp.group1,
    prior.se.group2,prior.sp.group2,
    prior.pi,n.sample,n.burnin,SUM)
```

Arguments

group1	vector of 0 and 1, and 1 indicates the positive
group2	vector of 0 and 1, and 1 indicates the positive
prior.se.group1	the prior range of sensitity of group1
prior.sp.group1	the prior range of specificity of group1
prior.se.group2	the prior range of sensitity of group2
prior.sp.group2	the prior range of specificity of group2
prior.pi	the prior range of detection rate
n.sample	the number of the Gibbs sampling, defalt is 12000
n.burnin	the number of the burn-in in Gibbs sampling, defalt is 2000
SUM	wheter to return the summary results, defalt is 'TRUE'

Value

table	if 'SUM' is TRUE, the Q50, Q2.5, and Q97.5 of sensitivity and specificity will be shown
PI	detection rate
S1	sensitivity of group1
S2	sensitivity of group2
C1	specificity of group1
C2	specificity of group2

Note

Please feel free to contact us, if you have any advice and find any bug!

Update description:

more functions will be included in 'DATXG' package!

Author(s)

Zhicheng Du<dgdzc@hotmail.com>, Yuantao Hao<haoyt@mail.sysu.edu.cn>

References

Haiyan Gu, Qiguang Chen. Diagnostic Test Assessment in the Absence of Gold Standard. Zhong Guo Wei Sheng Tong Ji (in Chinese). 1999. 16(4): 203-205.

Examples

```
group1=c(rep(1,86),rep(0,64))
group2=c(rep(1,27),rep(0,86-27),rep(1,5),rep(0,64-5))
prior.se.group1=c(0.5,0.85)
prior.sp.group1=c(0.8,1)
prior.se.group2=c(0.1,0.5)
prior.sp.group2=c(0.1,0.5)
prior.pi=c(0.66,0.67)

rst=DTAXG2(
  group1,
  group2,
  prior.se.group1,
  prior.sp.group1,
  prior.se.group2,
  prior.sp.group2,
  prior.pi,
  n.sample=120,
  n.burnin=20)

print(rst)
```

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