

Package ‘snem’

October 14, 2022

Type Package

Title EM Algorithm for Multivariate Skew-Normal Distribution with Overparametrization

Version 0.1.1

Date 2020-03-02

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Imports mvtnorm

Description Efficient estimation of multivariate skew-normal distribution in closed form.

License GPL (>= 2)

Encoding UTF-8

LazyData true

Suggests sn

RoxygenNote 7.0.2

NeedsCompilation no

Repository CRAN

Date/Publication 2020-03-16 12:30:02 UTC

R topics documented:

snem 2

Index 3

`snem`*EM algorithm for multivariate skew normal distribution.*

Description

EM algorithm in closed form.

Usage

```
snem(  
  x,  
  eps = 0.9,  
  iter.eps = 10^-6,  
  stop.rule = c("parameter", "log-likelihood")  
)
```

Arguments

<code>x</code>	A data matrix. Each row is an observation vector.
<code>eps</code>	Weight parameter with $0 \leq eps < 1$. Default is 0.9.
<code>iter.eps</code>	Convergence threshold. Default is 10^{-6} .
<code>stop.rule</code>	"parameter": The difference of the parameter is used as a stopping rule. "log-likelihood" The difference of the log-likelihood is used as a stopping rule.

Details

The parameter `eps` is a tuning parameter which ensures that an initial covariance matrix is positive semi-definite.

Value

Location parameter (`mu`), covariance matrix (`omega`), skewness parameter (`delta`), and another expression of skewness parameter (`lambda`).

References

Abe, T., Fujisawa, H., and Kawashima, T. (2019) *EM algorithm using overparametrization for multivariate skew-normal distribution, in preparation.*

Examples

```
library(sn)  
data(ais, package="sn")  
x <- ais[c("BMI")]  
snem(x, stop.rule = "log-likelihood")
```

Index

snem, [2](#)