Package ‘gnmf’

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Description This package performs generalized non-negative matrix factorization based on Renyi divergence.
License GPL-2
LazyLoad yes

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**gnmf-package**

*Generalized non-negative matrix factorization based on Renyi Divergence*

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**Description**

Generalized non-negative matrix factorization based on Renyi Divergence

**Details**

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Provides a function `gnmf` to perform non-negative matrix factorization.

**Author(s)**

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**References**


[http://devarajan.fccc.edu](http://devarajan.fccc.edu)

**Examples**

```r
data(V)
```

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**gnmf**

*Generalized non-negative matrix factorization based on Renyi Divergence*

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**Description**

Performs generalized non-negative matrix factorization based on Renyi Divergence
Usage

gnmf(V, scheme, nsteps = 2000, repeats = 20, cltarget = "PATTERN", clscheme = "Binary", reffile = "", scaling = "F", normalizing = "F", alphas = 1, runtype = "simulation", cstepsize = 20, idealization = 1)

Arguments

V Input data matrix
scheme KL, Renyi, or ED
nsteps Update steps, default 2000
repeats Repeats, default 20
ranks The number of components into which matrix V is to be factored, default 2 (a scalar)
cltarget Clustering target, default 'PATTERN' (H matrix) either PATTERN or ALTERNATE
clscheme Clustering scheme, default 'Binary', could be 'PearsonHC'
reffile Default none
scaling Boolean, default F
normalizing Boolean, H matrix normalization, default 'F'
alphas Renyi parameter, default 1.0 (a scalar), ignored if scheme is not Renyi
runtype simulation (default) or evaluation or whole
cstepsize Convergence test step size, default 20
idealization Default 1

Value

H List of pattern matrices, one for each repetition
W List of amplitude matrices, one for each repetition

Note

Further notes...

Author(s)

Jose M. Maisog, Guoli Wang, Karthik Devarajan

References


http://devarajan.fccc.edu
Examples

# Load sample data.
data(V)

# Compute NMF with 20 repeats.
result <- gnmf(V, scheme="KL")

# Extract H and W from the result.
# H and W are lists, each containing the result of 20 repeats.
H <- result$H
W <- result$W

# Get the H and W matrices of the first repeat.
H1 <- H[[1]]
W1 <- W[[1]]

---

Example 50 x 10 matrix

Description

Sample data for illustrating the use of GNMF.

Examples

data(V)
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