

Package ‘ORKM’

October 12, 2022

Title The Online Regularized K-Means Clustering Algorithm

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Version 0.4.0.0

Description Algorithm of online regularized k-means to deal with online multi(single) view data.
The philosophy of the package is described in Guo G. (2020)
<[doi:10.1080/02331888.2020.1823979](https://doi.org/10.1080/02331888.2020.1823979)>.

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RoxygenNote 7.2.0

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Config/testthat/edition 3

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citesview1	<i>The first view of Cora dataset.</i>
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Description

The first view of Cora dataset.

Usage

```
data("citesview1")
```

Format

The format is: Formal class 'dgTMatrix' [package "Matrix"] with 6 slots ..@ i : int [1:10556] 0 0 0 0 0 1 2 2 2 2@ j : int [1:10556] 8 14 258 435 544 344 410 471 552 565@ Dim : int [1:2] 2708 2708 ..@ Dimnames:List of 2 ..@\$: NULL ..@\$: NULL ..@ x : num [1:10556] 1 1 1 1 1 1 1 1 1 1@ factors : list()

Details

The first view of Cora dataset.

Source

<http://www.cs.umd.edu/projects/linqs/projects/lbc/>

References

<http://www.cs.umd.edu/projects/linqs/projects/lbc/>

Examples

```
data(citesview1)
## maybe str(citesview1) ; plot(citesview1) ...
```

`citesview2`*The second view of Cora dataset.*

Description

The second view of Cora dataset.

Usage

```
data("citesview2")
```

Format

The format is: Formal class 'dgTMatrix' [package "Matrix"] with 6 slots ..@ i : int [1:49216] 0 0 0 0 0 0 0 0 0@ j : int [1:49216] 118 125 176 252 351 456 507 521 619 648@ Dim : int [1:2] 2708 1433 ..@ Dimnames:List of 2\$: NULL\$: NULL ..@ x : num [1:49216] 1 1 1 1 1 1 1 1 1@ factors : list()

Details

The second view of Cora dataset.

Source

<http://www.cs.umd.edu/projects/linqs/projects/lbc/>

References

<http://www.cs.umd.edu/projects/linqs/projects/lbc/>

Examples

```
data(citesview2)
## maybe str(citesview2) ; plot(citesview2) ...
```

`citesview3`*The third view of Cora dataset.*

Description

The third view of Cora dataset.

Usage

```
data("citesview3")
```

Format

The format is: Formal class 'dgTMatrix' [package "Matrix"] with 6 slots ..@ i : int [1:5429] 163 163 163 163 163 163 163 163 163@ j : int [1:5429] 402 659 1696 2295 1274 1286 1544 2600 2363 1905@ Dim : int [1:2] 2708 2708 ..@ Dimnames:List of 2\$: NULL\$: NULL ..@ x : num [1:5429] 1 1 1 1 1 1 1 1 1@ factors : list()

Details

The third view of Cora dataset.

Source

<http://www.cs.umd.edu/projects/linqs/projects/lbc/>

References

<http://www.cs.umd.edu/projects/linqs/projects/lbc/>

Examples

```
data(citesview3)
## maybe str(citesview3) ; plot(citesview3) ...
```

citesview4

The fourth view of Cora dataset.

Description

The fourth view of Cora dataset.

Usage

```
data("citesview4")
```

Format

The format is: Formal class 'dgTMatrix' [package "Matrix"] with 6 slots ..@ i : int [1:5429] 402 659 1696 2295 1274 1286 1544 2600 2363 1905@ j : int [1:5429] 163 163 163 163 163 163 163 163 163@ Dim : int [1:2] 2708 2708 ..@ Dimnames:List of 2\$: NULL\$: NULL ..@ x : num [1:5429] 1 1 1 1 1 1 1 1 1@ factors : list()

Details

The fourth view of Cora dataset.

Source

<http://www.cs.umd.edu/projects/linqs/projects/lbc/>

References

<http://www.cs.umd.edu/projects/linqs/projects/lbc/>

Examples

```
data(citesview4)
## maybe str(citesview4) ; plot(citesview4) ...
```

DMC

Calculate the estimator on the DMC method

Description

Calculate the estimator on the DMC method

Usage

```
DMC(X, K, V, r, lamda, true, max.iter, method = 0)
```

Arguments

X	data matrix
K	number of cluster
V	number of view
r	first balance parameter
lamda	second balance parameter
true	true cluster result
max.iter	max iter
method	calculate the index of NMI

Value

NMI, Alpha, center, result

Author(s)

Miao Yu

Examples

```

library(MASS)
V=2;lamda=0.5;K=3;r=0.5;max.iter=10;n1=n2=n3=70
X1<-rnorm(n1,20,2);X2<-rnorm(n2,25,1.5);X3<-rnorm(n3,30,2)
Xv<-c(X1,X2,X3)
data<-matrix(Xv,n1+n2+n3,2)
data[1:70,2]<-1;data[71:140,2]<-2;data[141:210,2]<-3
truere=data[,2]
X<-matrix(data[,1],n1+n2+n3,1)
lamda1<-0.2;lamda2<-0.8
lamda0<-matrix(c(lamda1,lamda2),nrow=1,ncol=2)
sol.svd <- svd(lamda0)
U1<-sol.svd$u
D1<-sol.svd$d
V1<-sol.svd$v
C1<-t(U1)%*%t(X)
Y1<-C1/D1
view<-V1%*%Y1
view1<-matrix(view[1,])
view2<-matrix(view[2,])
X1<-matrix(view1,n1+n2+n3,1)
X2<-matrix(view2,n1+n2+n3,1)
DMC(X=X1,K=K,V=V,lamda=lamda,r=r,max.iter=max.iter,truere=truere,method=0)

```

INDEX

Calculate the indication on the functions

Description

Calculate the indication and the estimator on the functions,method=0 purity;method=1,precision;method=2,recall; method=3, F-score; method=4, RI.

Usage

```
INDEX(vec1, vec2, method = 0, mybeta = 0)
```

Arguments

vec1	algorithm cluster result
vec2	true cluster result
method	Calculate the selection of indicators.
mybeta	calculate the index

Value

accuracy

Examples

```
P1<-c(1,1,1,2,3,2,1);trueLabel<-c(1,1,1,2,2,2,3)
INDEX(P1,trueLabel,method=0);INDEX(P1,trueLabel,method=2)
```

KMeans

*Calculate the estimator on the KMeans method***Description**

Calculate the estimator on the KMeans method

Usage

```
KMeans(X, K, V, r, max.iter, trueLabel, method = 0)
```

Arguments

X	data matrix
K	number of cluster
V	number of view
r	balance parameter
trueLabel	true cluster result
max.iter	max iter
method	calculate the index of NMI

Value

NMI,weight,center,result

Author(s)

Miao Yu

Examples

```
library(MASS)
library(Matrix)
V=2;K=3;r=0.5;max.iter=10;n1=n2=n3=70
X1<-rnorm(n1,20,2);X2<-rnorm(n2,25,1.5);X3<-rnorm(n3,30,2)
Xv<-c(X1,X2,X3)
data<-matrix(Xv,n1+n2+n3,2)
data[1:70,2]<-1;data[71:140,2]<-2;data[141:210,2]<-3
trueLabel=data[,2]
X<-matrix(data[,1],n1+n2+n3,1)
lamda1<-0.2;lamda2<-0.8
lamda<-matrix(c(lamda1,lamda2),nrow=1,ncol=2)
sol.svd <- svd(lamda)
```

```
U1<-sol.svd$u
D1<-sol.svd$d
V1<-sol.svd$v
C1<-t(U1)
Y1<-C1/D1
view<-V1
view1<-matrix(view[1,])
view2<-matrix(view[2,])
X1<-matrix(view1,n1+n2+n3,1)
X2<-matrix(view2,n1+n2+n3,1)
KMeans(X=X1,K=K,V=V,r=r,max.iter=max.iter,truere=truere,method=0)
```

movie1

The first view of Movie dataset.

Description

The first view of Movie dataset.

Usage

```
data("movie1")
```

Format

A data frame with 617 observations on the following 1878 variables.

V1 a numeric vector
V2 a numeric vector
V3 a numeric vector
V4 a numeric vector
V5 a numeric vector
V6 a numeric vector
V7 a numeric vector
V8 a numeric vector
V9 a numeric vector
V10 a numeric vector
V11 a numeric vector
V12 a numeric vector
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Details

The first view of Movie dataset.

Source

<https://lig-membres.imag.fr/grimal/data.html>.

References

C. Grimal. the multi-view movie data set. 2010. URL <https://lig-membres.imag.fr/grimal/data.html>.

Examples

```
data(movie1)
## maybe str(movie1) ; plot(movie1) ...
```

movie2

The second view of Movie data set.

Description

The second view of Movie data set.

Usage

```
data("movie2")
```

Format

A data frame with 617 observations on the following 1398 variables.

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V902 a numeric vector
V903 a numeric vector
V904 a numeric vector
V905 a numeric vector
V906 a numeric vector
V907 a numeric vector
V908 a numeric vector
V909 a numeric vector
V910 a numeric vector
V911 a numeric vector
V912 a numeric vector
V913 a numeric vector
V914 a numeric vector
V915 a numeric vector
V916 a numeric vector
V917 a numeric vector
V918 a numeric vector
V919 a numeric vector
V920 a numeric vector
V921 a numeric vector
V922 a numeric vector
V923 a numeric vector

- V924 a numeric vector
- V925 a numeric vector
- V926 a numeric vector
- V927 a numeric vector
- V928 a numeric vector
- V929 a numeric vector
- V930 a numeric vector
- V931 a numeric vector
- V932 a numeric vector
- V933 a numeric vector
- V934 a numeric vector
- V935 a numeric vector
- V936 a numeric vector
- V937 a numeric vector
- V938 a numeric vector
- V939 a numeric vector
- V940 a numeric vector
- V941 a numeric vector
- V942 a numeric vector
- V943 a numeric vector
- V944 a numeric vector
- V945 a numeric vector
- V946 a numeric vector
- V947 a numeric vector
- V948 a numeric vector
- V949 a numeric vector
- V950 a numeric vector
- V951 a numeric vector
- V952 a numeric vector
- V953 a numeric vector
- V954 a numeric vector
- V955 a numeric vector
- V956 a numeric vector
- V957 a numeric vector
- V958 a numeric vector
- V959 a numeric vector
- V960 a numeric vector

V961 a numeric vector
V962 a numeric vector
V963 a numeric vector
V964 a numeric vector
V965 a numeric vector
V966 a numeric vector
V967 a numeric vector
V968 a numeric vector
V969 a numeric vector
V970 a numeric vector
V971 a numeric vector
V972 a numeric vector
V973 a numeric vector
V974 a numeric vector
V975 a numeric vector
V976 a numeric vector
V977 a numeric vector
V978 a numeric vector
V979 a numeric vector
V980 a numeric vector
V981 a numeric vector
V982 a numeric vector
V983 a numeric vector
V984 a numeric vector
V985 a numeric vector
V986 a numeric vector
V987 a numeric vector
V988 a numeric vector
V989 a numeric vector
V990 a numeric vector
V991 a numeric vector
V992 a numeric vector
V993 a numeric vector
V994 a numeric vector
V995 a numeric vector
V996 a numeric vector
V997 a numeric vector

V998 a numeric vector
V999 a numeric vector
V1000 a numeric vector
V1001 a numeric vector
V1002 a numeric vector
V1003 a numeric vector
V1004 a numeric vector
V1005 a numeric vector
V1006 a numeric vector
V1007 a numeric vector
V1008 a numeric vector
V1009 a numeric vector
V1010 a numeric vector
V1011 a numeric vector
V1012 a numeric vector
V1013 a numeric vector
V1014 a numeric vector
V1015 a numeric vector
V1016 a numeric vector
V1017 a numeric vector
V1018 a numeric vector
V1019 a numeric vector
V1020 a numeric vector
V1021 a numeric vector
V1022 a numeric vector
V1023 a numeric vector
V1024 a numeric vector
V1025 a numeric vector
V1026 a numeric vector
V1027 a numeric vector
V1028 a numeric vector
V1029 a numeric vector
V1030 a numeric vector
V1031 a numeric vector
V1032 a numeric vector
V1033 a numeric vector
V1034 a numeric vector

V1035 a numeric vector
V1036 a numeric vector
V1037 a numeric vector
V1038 a numeric vector
V1039 a numeric vector
V1040 a numeric vector
V1041 a numeric vector
V1042 a numeric vector
V1043 a numeric vector
V1044 a numeric vector
V1045 a numeric vector
V1046 a numeric vector
V1047 a numeric vector
V1048 a numeric vector
V1049 a numeric vector
V1050 a numeric vector
V1051 a numeric vector
V1052 a numeric vector
V1053 a numeric vector
V1054 a numeric vector
V1055 a numeric vector
V1056 a numeric vector
V1057 a numeric vector
V1058 a numeric vector
V1059 a numeric vector
V1060 a numeric vector
V1061 a numeric vector
V1062 a numeric vector
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V1072 a numeric vector
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V1078 a numeric vector
V1079 a numeric vector
V1080 a numeric vector
V1081 a numeric vector
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V1083 a numeric vector
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V1087 a numeric vector
V1088 a numeric vector
V1089 a numeric vector
V1090 a numeric vector
V1091 a numeric vector
V1092 a numeric vector
V1093 a numeric vector
V1094 a numeric vector
V1095 a numeric vector
V1096 a numeric vector
V1097 a numeric vector
V1098 a numeric vector
V1099 a numeric vector
V1100 a numeric vector
V1101 a numeric vector
V1102 a numeric vector
V1103 a numeric vector
V1104 a numeric vector
V1105 a numeric vector
V1106 a numeric vector
V1107 a numeric vector
V1108 a numeric vector

V1109 a numeric vector
V1110 a numeric vector
V1111 a numeric vector
V1112 a numeric vector
V1113 a numeric vector
V1114 a numeric vector
V1115 a numeric vector
V1116 a numeric vector
V1117 a numeric vector
V1118 a numeric vector
V1119 a numeric vector
V1120 a numeric vector
V1121 a numeric vector
V1122 a numeric vector
V1123 a numeric vector
V1124 a numeric vector
V1125 a numeric vector
V1126 a numeric vector
V1127 a numeric vector
V1128 a numeric vector
V1129 a numeric vector
V1130 a numeric vector
V1131 a numeric vector
V1132 a numeric vector
V1133 a numeric vector
V1134 a numeric vector
V1135 a numeric vector
V1136 a numeric vector
V1137 a numeric vector
V1138 a numeric vector
V1139 a numeric vector
V1140 a numeric vector
V1141 a numeric vector
V1142 a numeric vector
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V1146 a numeric vector
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V1170 a numeric vector
V1171 a numeric vector
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V1173 a numeric vector
V1174 a numeric vector
V1175 a numeric vector
V1176 a numeric vector
V1177 a numeric vector
V1178 a numeric vector
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V1180 a numeric vector
V1181 a numeric vector
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V1183 a numeric vector
V1184 a numeric vector
V1185 a numeric vector
V1186 a numeric vector
V1187 a numeric vector
V1188 a numeric vector
V1189 a numeric vector
V1190 a numeric vector
V1191 a numeric vector
V1192 a numeric vector
V1193 a numeric vector
V1194 a numeric vector
V1195 a numeric vector
V1196 a numeric vector
V1197 a numeric vector
V1198 a numeric vector
V1199 a numeric vector
V1200 a numeric vector
V1201 a numeric vector
V1202 a numeric vector
V1203 a numeric vector
V1204 a numeric vector
V1205 a numeric vector
V1206 a numeric vector
V1207 a numeric vector
V1208 a numeric vector
V1209 a numeric vector
V1210 a numeric vector
V1211 a numeric vector
V1212 a numeric vector
V1213 a numeric vector
V1214 a numeric vector
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V1220 a numeric vector
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V1233 a numeric vector
V1234 a numeric vector
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V1274 a numeric vector
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V1276 a numeric vector
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V1278 a numeric vector
V1279 a numeric vector
V1280 a numeric vector
V1281 a numeric vector
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V1283 a numeric vector
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V1286 a numeric vector
V1287 a numeric vector
V1288 a numeric vector
V1289 a numeric vector
V1290 a numeric vector
V1291 a numeric vector
V1292 a numeric vector
V1293 a numeric vector

V1294 a numeric vector
V1295 a numeric vector
V1296 a numeric vector
V1297 a numeric vector
V1298 a numeric vector
V1299 a numeric vector
V1300 a numeric vector
V1301 a numeric vector
V1302 a numeric vector
V1303 a numeric vector
V1304 a numeric vector
V1305 a numeric vector
V1306 a numeric vector
V1307 a numeric vector
V1308 a numeric vector
V1309 a numeric vector
V1310 a numeric vector
V1311 a numeric vector
V1312 a numeric vector
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V1316 a numeric vector
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V1326 a numeric vector
V1327 a numeric vector
V1328 a numeric vector
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V1331 a numeric vector
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V1357 a numeric vector
V1358 a numeric vector
V1359 a numeric vector
V1360 a numeric vector
V1361 a numeric vector
V1362 a numeric vector
V1363 a numeric vector
V1364 a numeric vector
V1365 a numeric vector
V1366 a numeric vector
V1367 a numeric vector

- V1368 a numeric vector
- V1369 a numeric vector
- V1370 a numeric vector
- V1371 a numeric vector
- V1372 a numeric vector
- V1373 a numeric vector
- V1374 a numeric vector
- V1375 a numeric vector
- V1376 a numeric vector
- V1377 a numeric vector
- V1378 a numeric vector
- V1379 a numeric vector
- V1380 a numeric vector
- V1381 a numeric vector
- V1382 a numeric vector
- V1383 a numeric vector
- V1384 a numeric vector
- V1385 a numeric vector
- V1386 a numeric vector
- V1387 a numeric vector
- V1388 a numeric vector
- V1389 a numeric vector
- V1390 a numeric vector
- V1391 a numeric vector
- V1392 a numeric vector
- V1393 a numeric vector
- V1394 a numeric vector
- V1395 a numeric vector
- V1396 a numeric vector
- V1397 a numeric vector
- V1398 a numeric vector

Details

The second view of Movie data set.

Source

<https://lig-membres.imag.fr/grimal/data.html>.

References

C. Grimal. the multi-view movie data set. 2010. URL <https://lig-membres.imag.fr/grimal/data.html>.

Examples

```
data(movie2)
## maybe str(movie2) ; plot(movie2) ...
```

OGD

Calculate the result and the estimator on the OGD

Description

Calculate the pardon matrix and the estimator on the OGD

Usage

```
OGD(X, K, gamma, max.m, chushi, yita, epsilon, truer, method = 0)
```

Arguments

X	data matrix
K	number of cluster
gamma	step size
yita	the regularized parameter
truer	true cluster result
max.m	max iter
epsilon	epsilon
chushi	the initial value
method	calculate the index of NMI

Value

result,NMI,M

Author(s)

Miao Yu

Examples

```

yita=0.5;V=2;K=3;chushi=100;epsilon=1;gamma=0.1;max.m=10;n1=n2=n3=70
X1<-rnorm(n1,20,2);X2<-rnorm(n2,25,1.5);X3<-rnorm(n3,30,2)
Xv<-c(X1,X2,X3)
data<-matrix(Xv,n1+n2+n3,2)
data[1:70,2]<-1;data[71:140,2]<-2;data[141:210,2]<-3
X<-matrix(data[,1],n1+n2+n3,1)
truere=data[,2]
lamda1<-0.2;lamda2<-0.8
lamda<-matrix(c(lamda1,lamda2),nrow=1,ncol=2)
sol.svd <- svd(lamda)
U1<-sol.svd$u
D1<-sol.svd$d
V1<-sol.svd$v
C1<-t(U1)
Y1<-C1/D1
view<-V1
view1<-matrix(view[1,])
view2<-matrix(view[2,])
X1<-matrix(view1,n1+n2+n3,1)
X2<-matrix(view2,n1+n2+n3,1)
OGD(X=X1,K=K,gamma=gamma,max.m=max.m,chushi=chushi,
yita=yita,epsilon=epsilon,truere=truere,method=0)

```

 OMU

Calculate the pardon matrix and the estimator on the OMU

Description

Calculate the pardon matrix and the estimator on the OMU

Usage

```
OMU(X,K,V,chushi,yita,r,max.iter,epsilon,truere,method=0)
```

Arguments

X	data matrix
K	number of cluster
V	number of view
chushi	the initial value
yita	the regularized parameter
r	banlance parameter
max.iter	max iter
epsilon	epsilon
truere	true cluster result
method	calculate the index of NMI

Value

NMI,result,M

Examples

```

yita=0.5;V=2;chushi=100;K=3;r=0.5;max.iter=10;n1=n2=n3=70;epsilon=1
X1<-rnorm(n1,20,2);X2<-rnorm(n2,25,1.5);X3<-rnorm(n3,30,2)
Xv<-c(X1,X2,X3)
data<-matrix(Xv,n1+n2+n3,2)
data[1:70,2]<-1;data[71:140,2]<-2;data[141:210,2]<-3
truere=data[,2]
X<-matrix(data[,1],n1+n2+n3,1)
lamda1<-0.2;lamda2<-0.8
lamda<-matrix(c(lamda1,lamda2),nrow=1,ncol=2)
sol.svd <- svd(lamda)
U1<-sol.svd$u
D1<-sol.svd$d
V1<-sol.svd$v
C1<-t(U1)%*%t(X)
Y1<-C1/D1
view<-V1%*%Y1
view1<-matrix(view[1,])
view2<-matrix(view[2,])
X1<-matrix(view1,n1+n2+n3,1)
X2<-matrix(view2,n1+n2+n3,1)
OMU(X=X1,K=K,V=V,chushi=chushi,yita=yita,r=r,max.iter=max.iter,
epsilon=epsilon,truere=truere,method=0)

```

ORKMeans

*Calculate the estimator on the ORKMeans method***Description**

Calculate the estimator on the ORKMeans method

Usage

```
ORKMeans(X,K,V,chushi,r,yita,gamma,alpha,epsilon,truere,max.iter,method=0)
```

Arguments

X	is the data matrix
K	is the number of cluster
V	is the view of X
chushi	is the initial value for online
yita	is the regularized parameter
r	is the banlance parameter

gamma	is the step size
alpha	is the caculated the weight of view
epsilon	is the epsilon
truere	is the ture label in data set
max.iter	is the max iter
method	is the caluate the NMI

Value

NMI,weight,center,result

Author(s)

Miao Yu

Examples

```

library(MASS)
library(Matrix)
yita=0.5;V=2;chushi=100;K=3;r=0.5;max.iter=10;n1=n2=n3=70;gamma=0.1;alpha=0.98;epsilon=1
X1<-rnorm(n1,20,2);X2<-rnorm(n2,25,1.5);X3<-rnorm(n3,30,2)
Xv<-c(X1,X2,X3)
data<-matrix(Xv,n1+n2+n3,2)
data[1:70,2]<-1;data[71:140,2]<-2;data[141:210,2]<-3
truere=data[,2]
X<-matrix(data[,1],n1+n2+n3,1)
lamda1<-0.2;lamda2<-0.8
lamda<-matrix(c(lamda1,lamda2),nrow=1,ncol=2)
sol.svd <- svd(lamda)
U1<-sol.svd$u
D1<-sol.svd$d
V1<-sol.svd$v
C1<-t(U1)
Y1<-C1/D1
view<-V1
view1<-matrix(view[1,])
view2<-matrix(view[2,])
X1<-matrix(view1,n1+n2+n3,1)
X2<-matrix(view2,n1+n2+n3,1)
ORKMeans(X=X1,K=K,V=V,r=r,chushi=chushi,yita=yita,gamma=gamma,epsilon=epsilon,
max.iter=max.iter,truere=truere,method=0)

```

PKMeans

Calculate the pardon matrix and the estimator on the PKMeans

Description

Calculate the pardon matrix and the estimator on the PKMeans

Usage

```
PKMeans(X, K, yitapower, sm, max.m, truere, method = 0)
```

Arguments

X	is the data matrix
K	is the number of cluster
yitapower	is the regularized parameter
sm	is the banlance parameter
max.m	is the max iter
truere	is the ture label in data set
method	is the caluate the NMI

Value

center,NMI,result

Author(s)

Miao Yu

Examples

```
library(MASS)
yitapower=0.5;K=3;sm=0.5;max.m=100;n1=n2=n3=70
X1<-rnorm(n1,20,2);X2<-rnorm(n2,25,1.5);X3<-rnorm(n3,30,2)
Xv<-c(X1,X2,X3)
data<-matrix(Xv,n1+n2+n3,2)
data[1:70,2]<-1;data[71:140,2]<-2;data[141:210,2]<-3
truere=data[,2]
X11<-matrix(data[,1],n1+n2+n3,1)
PKMeans(X=X11,K=K,yitapower=yitapower,sm=sm,max.m=max.m,truere=truere,method=0)
```

QCM

The QCM data set with K=5.

Description

The QCM data set with K=5.

Usage

```
data("QCM")
```

Format

A data frame with 125 observations on the following 15 variables.

V1 a numeric vector
V2 a numeric vector
V3 a numeric vector
V4 a numeric vector
V5 a numeric vector
V6 a numeric vector
V7 a numeric vector
V8 a numeric vector
V9 a numeric vector
V10 a numeric vector
V11 a numeric vector
V12 a numeric vector
V13 a numeric vector
V14 a numeric vector
V15 a numeric vector

Details

The QCM data set with $K=5$.

Source

<https://www.sciencedirect.com/science/article/pii/S2215098619303337>.

References

M. F. Adak, P. Lieberzeit, P. Jarujamrus, and N. Yumusak. Classification of alcohols obtained by qcm sensors with different characteristics using abc based neural network. *Engineering Science and Technology, an International Journal*, 23(3):463–469, 2020. ISSN 2215-0986. doi: <https://doi.org/10.1016/j.jestch.2019.06.011>. URL <https://www.sciencedirect.com/science/article/pii/S2215098619303337>.

Examples

```
data(QCM)
## maybe str(QCM) ; plot(QCM) ...
```

 RKMeans

 Calculate the pardon matrix and the estimator on the RKMeans

Description

Calculate the pardon matrix and the estimator on the RKMeans

Usage

```
RKMeans(X, K, V, yita, r, max.iter, truer, method = 0)
```

Arguments

X	is the data matrix
K	is the number of cluster
V	is the view of X
yita	is the regularized parameter
r	is the banlance parameter
max.iter	is the max iter
truer	is the ture label in data set
method	is the caluate the NMI

Value

NMI,weight,center,result

Author(s)

Miao Yu

Examples

```
library(MASS)
library(Matrix)
yita=0.5;V=2;K=3;r=0.5;max.iter=10;n1=n2=n3=70
X1<-rnorm(n1,20,2);X2<-rnorm(n2,25,1.5);X3<-rnorm(n3,30,2)
Xv<-c(X1,X2,X3)
data<-matrix(Xv,n1+n2+n3,2)
data[1:70,2]<-1;data[71:140,2]<-2;data[141:210,2]<-3
X<-matrix(data[,1],n1+n2+n3,1)
truer=data[,2]
lamda1<-0.2;lamda2<-0.8
lamda<-matrix(c(lamda1,lamda2),nrow=1,ncol=2)
sol.svd <- svd(lamda)
U1<-sol.svd$u
D1<-sol.svd$d
V1<-sol.svd$v
```



```
C1<-t(U1)
Y1<-C1/D1
view<-V1
view1<-matrix(view[1,])
view2<-matrix(view[2,])
X1<-matrix(view1,n1+n2+n3,1)
X2<-matrix(view2,n1+n2+n3,1)
RKMeans(X=X1,K=K,V=V,yita=yita,r=r,max.iter=max.iter,truere=truere,method=0)
```

seed

A single-view data set named seed.

Description

A single-view data set named seed.

Usage

```
data("seed")
```

Format

A data frame with 210 observations on the following 8 variables.

V1 a numeric vector
V2 a numeric vector
V3 a numeric vector
V4 a numeric vector
V5 a numeric vector
V6 a numeric vector
V7 a numeric vector
V8 a numeric vector

Details

A single-view data set named seed.

Source

<http://archive.ics.uci.edu/ml/datasets/seeds>

References

<http://archive.ics.uci.edu/ml/datasets/seeds>

Examples

```
data(seed)
## maybe str(seed) ; plot(seed) ...
```

sobar

A single-view data set named sobar.

Description

A single-view data set named sobar.

Usage

```
data("sobar")
```

Format

A data frame with 72 observations on the following 19 variables.

behavior_sexualRisk a numeric vector
behavior_eating a numeric vector
behavior_personalHygiene a numeric vector
intention_aggregation a numeric vector
intention_commitment a numeric vector
attitude_consistency a numeric vector
attitude_spontaneity a numeric vector
norm_significantPerson a numeric vector
norm_fulfillment a numeric vector
perception_vulnerability a numeric vector
perception_severity a numeric vector
motivation_strength a numeric vector
motivation_willingness a numeric vector
socialSupport_emotionality a numeric vector
socialSupport_appreciation a numeric vector
socialSupport_instrumental a numeric vector
empowerment_knowledge a numeric vector
empowerment_abilities a numeric vector
empowerment_desires a numeric vector

Details

A single-view data set named sobar.

Source

<http://archive.ics.uci.edu/ml/datasets/Cervical+Cancer+Behavior+Risk>

References

<http://archive.ics.uci.edu/ml/datasets/Cervical+Cancer+Behavior+Risk>

Examples

```
data(sobar)
## maybe str(sobar) ; plot(sobar) ...
```

turelabel	<i>Ture label of Movie data set.</i>
-----------	--------------------------------------

Description

Ture label of Movie data set.

Usage

```
data("turelabel")
```

Format

A data frame with 617 observations on the following variable.

V1 a numeric vector

Details

Ture label of Movie data set.

Source

<https://lig-membres.imag.fr/grimal/data.html>.

References

C. Grimal. the multi-view movie data set. 2010. URL <https://lig-membres.imag.fr/grimal/data.html>.

Examples

```
data(turelabel)
## maybe str(turelabel) ; plot(turelabel) ...
```

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