Package: RSSRMR (via r-universe)

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Type Package

Title Robust Self-Representation Sparse Reconstruction and Manifold Regularization

Version 0.1.0

Description Feature selection and clustering classification under the presence of multivariate outliers in high-dimensional unlabeled data.

License GPL-3

Encoding UTF-8

RoxygenNote 8.0.0

Imports robustbase, stats

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

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NeedsCompilation no

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Contents

dweight *Robust Distance Weights*

Description

Computes robust observation weights.

Usage

```
dweight(x, q = 0.9)
```

Arguments

x	Numeric data matrix.
q	Quantile threshold.

Value

Numeric vector of weights.

Examples

```
set.seed(123)

x <- matrix(rnorm(50), nrow = 10)

dweight(x)
```

RSSRMR *Robust Self-Representation Sparse Reconstruction and Manifold Regularization*

Description

Performs robust sparse self-representation with manifold regularization.

Usage

```
RSSRMR(x, Wt, L, alpha = 1, beta = 1, epsilon = 0.001, maxites = 50)
```

Arguments

x	Numeric data matrix.
Wt	Weight matrix.
L	Laplacian matrix.
alpha	Regularization parameter.
beta	Graph regularization parameter.
epsilon	Convergence threshold.
maxites	Maximum number of iterations.

Value

A list containing:

Optimum.A Coefficient matrix

Optimum.G Diagonal weight matrix

Examples

```
set.seed(6542)

cluster1 <- matrix(
  rnorm(12 * 5, mean = 2, sd = 0.5),
  nrow = 12
)

cluster2 <- matrix(
  rnorm(13 * 5, mean = 7, sd = 0.5),
  nrow = 13
)

X <- rbind(cluster1, cluster2)

wd <- diag(runif(25))
lp <- diag(runif(25))

fit <- RSSRMR(
  x = X,
  Wt = wd,
  L = lp
)

fit$Optimum.G
```

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