Package 'tpe'

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Type Package

Title Tree preserving embedding

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Description This package implements the greedy approximation for tree preserving embedding.

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R topics documented:

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tpe-package   *Tree preserving embedding*

Description

This package implements the greedy approximation for tree preserving embedding.

Details

The functions `tpe1d` and `tpe2d` find one-dimensional and two-dimensional tree preserving embeddings respectively.

References

Shieh AD, Hashimoto TB, Airoldi EM (2011) Tree preserving embedding. *Proc Natl Acad Sci USA* 108:16916–16921.

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digits   *Handwritten digits*

Description

Euclidean distances between 1000 handwritten digits.

Usage

```
data(digits)
```

Format

A `dist` object with the dissimilarity matrix.

References

Hull JJ (1994) A database for handwritten text recognition research. *IEEE Trans Pattern Anal Mach Intell* 16:550–554.

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protein	*Protein sequences*

Description

Inverse sequence alignment scores from the basic local alignment search tool (BLAST) between 124 protein sequences.

Usage

```
data(protein)
```

Format

A [dist](#) object with the dissimilarity matrix.

References

Pollack JD, Li Q, Pearl DK (2005) Taxonomic utility of a phylogenetic analysis of phosphoglycerate kinase proteins of archaea, bacteria, and eukaryota: Insights by bayesian analyses. *Mol Phylogenet Evol* 35:420–430.

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radar	*Radar signals*

Description

Euclidean distances between 351 radar signals.

Usage

```
data(radar)
```

Format

A [dist](#) object with the dissimilarity matrix.

References

Sigillito VG, Wing SP, Hutton LV, Baker KB (1989) Classification of radar returns from the ionosphere using neural networks. *Johns Hopkins Apl Tech Dig* 10:262–266.

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tpe1d *One-dimensional tree preserving embedding*

Description

Finds a one-dimensional tree preserving embedding of a dissimilarity matrix.

Usage

```
tpe1d(d, verbose=TRUE)
```

Arguments

d	A [dist](#) object with the dissimilarity matrix.
verbose	A logical value indicating whether to print progress.

Details

Implements the greedy approximation for one-dimensional tree preserving embedding.

Value

A matrix with the embedding coordinates.

References

Shieh AD, Hashimoto TB, Airoldi EM (2011) Tree preserving embedding. *Proc Natl Acad Sci USA* 108:16916–16921.

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tpe2d *Two-dimensional tree preserving embedding*

Description

Finds a two-dimensional tree preserving embedding of a dissimilarity matrix.

Usage

```
tpe2d(d, verbose=TRUE)
```

Arguments

d	A [dist](#) object with the dissimilarity matrix.
verbose	A logical value indicating whether to print progress.

Details

Implements the greedy approximation for two-dimensional tree preserving embedding.

Value

A matrix with the embedding coordinates.

References

Shieh AD, Hashimoto TB, Airoldi EM (2011) Tree preserving embedding. *Proc Natl Acad Sci USA* 108:16916–16921.

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