Package ‘tsne’
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Type Package
Title T-Distributed Stochastic Neighbor Embedding for R (t-SNE)
Version 0.1-3
Date 2016-06-04
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Maintainer Justin Donaldson <jdonaldson@gmail.com>
Description A “pure R” implementation of the t-SNE algorithm.
License GPL
LazyLoad yes
NeedsCompilation no
URL https://github.com/jdonaldson/rtsne/
BugReports https://github.com/jdonaldson/rtsne/issues
Repository CRAN
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   tsne-package The tsne-package for multidimensional scaling

Description

   This package contains one function called tsne which contains all the functionality.

Details
Author(s)

Justin Donaldson https://github.com/jdonaldson/rtsne Maintainer: Justin Donaldson (jdonaldson@gmail.com)

References


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tsne

The t-SNE method for dimensionality reduction

Description

Provides a simple function interface for specifying t-SNE dimensionality reduction on R matrices or "dist" objects.

Usage

tsne(x, initial_config = NULL, k = 2, initial_dims = 30, perplexity = 30, max_iter = 1000, min_cost = 0, epoch_callback = NULL, whiten = TRUE, epoch=100)

Arguments

- `x`: The R matrix or "dist" object
- `initial_config`: an argument providing a matrix specifying the initial embedding for X. See Details.
- `k`: the dimension of the resulting embedding.
- `initial_dims`: The number of dimensions to use in reduction method.
- `perplexity`: Perplexity parameter. (optimal number of neighbors)
- `max_iter`: Maximum number of iterations to perform.
**min_cost**

The minimum cost value (error) to halt iteration.

**epoch_callback**

A callback function used after each epoch (an epoch here means a set number of iterations)

**whiten**

A boolean value indicating whether the matrix data should be whitened.

**epoch**

The number of iterations in between update messages.

**Details**

When the initial_config argument is specified, the algorithm will automatically enter the *final momentum* stage. This stage has less large scale adjustment to the embedding, and is intended for small scale tweaking of positioning. This can greatly speed up the generation of embeddings for various similar X datasets, while also preserving overall embedding orientation.

**Value**

An R object containing a *ydata* embedding matrix, as well as a the matrix of probabilities *P*

**Author(s)**

Justin Donaldson (jdonaldson@gmail.com)

**References**


**See Also**

-dist

**Examples**

```r
## Not run:
colors = rainbow(length(unique(iris$Species)))
names(colors) = unique(iris$Species)
ecb = function(x,y){ plot(x,t='n'); text(x,labels=iris$Species, col=colors[iris$Species]) }

# compare to PCA
dev.new()
pca_iris = princomp(iris[,1:4])$scores[,1:2]
plot(pca_iris, t='n')
text(pca_iris, labels=iris$Species, col=colors[iris$Species])

## End(Not run)
```
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