Package ‘CRPClustering’

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Type Package

Title Bayesian Nonparametric Chinese Restaurant Process Clustering with Entropy

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Depends R (>= 3.2.3)

License GPL (>= 2)

Imports MASS, mvtnorm, randomcoloR, lucid, dplyr, graphics, stats, utils, png

Encoding UTF-8

LazyData true

RoxygenNote 6.0.1

Suggests R.rsp

VignetteBuilder R.rsp

NeedsCompilation no

Repository CRAN

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Markov chain Monte Carlo methods for CRP clustering

Usage

```
crp_gibbs(data, mu = c(0, 0), sigma_table = 14, alpha = 0.3, ro_0 = 0.1,
burn_in = 40, iteration = 200)
```

Arguments

- **data**: a matrix of data for clustering. Row is each data_i and column is dimensions of each data_i.
- **mu**: a vector of center points of data. If data is 3 dimensions, a vector of 3 elements like c(2,4,2).
- **sigma_table**: a numeric of CRP variance.
- **alpha**: a numeric of a CRP concentrate rate.
- **ro_0**: a numeric of a CRP mu change rate.
- **burn_in**: an iteration integer of burn in.
- **iteration**: an iteration integer.

Value

- **z_result**: an array expresses cluster numbers for each data_i.

Examples

```
data <- matrix(c(1.8,1.9,2.1,2.5,5.6,5.2,6,6.1), 4, 2)
z_result <- crp_gibbs(
data, 
mu=c(0,0),
sigma_table=14, 
alpha=0.3, 
ro_0=0.1, 
burn_in=10, 
iteration=100 
)
```
CRP clustering visualization

data: a matrix of data for clustering. Row is each data_i and column is dimensions of each data_i.
z_result: an array denotes the number of a cluster for each data_i and it is the output of the method "crp_gibbs".

Description

Generated from three normal distributions.

Usage

crp_graph_2d(data = data, z_result = z_result)
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