Package: kdpee (via r-universe)

October 9, 2024

Title Fast Multidimensional Entropy Estimation by k-d Partitioning

Version 1.0.0

Description Estimate entropy of multidimensional data set.

License GPL (>= 3)

Imports checkmate

Encoding UTF-8

RoxygenNote 7.1.1

NeedsCompilation yes

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kdpee *Fast Entropy Estimation of Multi-Dimensional Data*

Description

Non-parametric estimator for the differential entropy of a multidimensional distribution, given a limited set of data points, by a recursive rectilinear partitioning.

Usage

```
kdpee(X, ci = 0.95, lower = apply(X, 2, min), upper = apply(X, 2, max))
```

Arguments

X	[matrix] Data, one observation per row.
ci	[numeric(1)] Confidence threshold used to decide if a cell should be divided further. Defaults to 95%.
lower	[numeric(n)] Lower bound of the support of X.
upper	[numeric(n)] Upper bound of the support of X.

Value

Differential entropy estimate.

References

D. Stowell and M. D. Plumbley Fast multidimensional entropy estimation by k-d partitioning. IEEE Signal Processing Letters 16 (6), 537–540, June 2009. http://dx.doi.org/10.1109/LSP.2009.2017346

Examples

```
Xu <- matrix(runif(1000 * 100), ncol=100)
kdpee(Xu)

Xn <- matrix(rnorm(1000 * 100), ncol=100)
kdpee(Xn)
```

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