# Package: rnetcarto (via r-universe)

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**Type** Package

**Title** Fast Network Modularity and Roles Computation by Simulated Annealing (Rgraph C Library Wrapper for R)

**Version** 0.2.6

**Description** Provides functions to compute the modularity and modularity-related roles in networks. It is a wrapper around the rgraph library (Guimera & Amaral, 2005, <doi:10.1038/nature03288>).

**License** GPL (>= 2)

**Encoding** UTF-8

**LazyLoad** no

**SystemRequirements** GNU GSL

**NeedsCompilation** yes

**Suggests** testthat, knitr, rmarkdown, igraph

**VignetteBuilder** knitr

**RoxygenNote** 7.2.1

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**Config/pak/sysreqs** libgsl0-dev

**Repository** https://cran.r-universe.dev

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`rnetcarto` *Computes modularity and modularity roles from a network.*

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## Description

Compute modularity and modularity roles for graphs using simulated annealing

## Usage

```
netcarto(
  web,
  seed = as.integer(floor(runif(1, 1, 100000001))),
  iterfac = 1,
  coolingfac = 0.995,
  bipartite = FALSE
)
```

## Arguments

| | |
|---|---|
| `web` | network either as a square adjacency matrix or a list describing E interactions a->b: the first (resp. second) element is the vector of the labels of a (resp. b), the third (optional) is the vector of interaction weights. |
| `seed` | Seed for the random number generator: Must be a positive integer. |
| `iterfac` | At each temperature of the simulated annealing (SA), the program performs fN^2 individual-node updates (involving the movement of a single node from one module to another) and fN collective updates (involving the merging of two modules and the split of a module). The number "f" is the iteration factor. |
| `coolingfac` | Temperature cooling factor. |
| `bipartite` | If True use the bipartite definition of modularity. |

## Value

A list. The first element is a dataframe with the name, module, z-score, and participation coefficient for each row of the input matrix. The second element is the modularity of this partition.

## Examples

```
# Generate a simple random network
a = matrix(as.integer(runif(100)<.3), ncol=10)
a[lower.tri(a)] = 0
# Find an optimal partition for modularity using netcarto.
netcarto(a)
```

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