Package 'RcppHungarian'

October 12, 2022

Type Package

Title Solves Minimum Cost Bipartite Matching Problems

Version 0.2

Date 2022-01-21

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Description Header library and R functions to solve minimum cost bipartite matching problem using Huhn-Munkres algorithm (Hungarian algorithm; <https://en.wikipedia.org/wiki/Hungarian_algorithm>; Kuhn (1955) <doi:10.1002/nav.3800020109>). This is a repackaging of code written by Cong Ma in the GitHub repo <https://github.com/mcximing/hungarian-algorithm-cpp>.

License GPL (>= 2)

Imports Rcpp (>= 1.0.1)

LinkingTo Rcpp

Suggests testthat (>= 2.1.0), knitr, rmarkdown, ggplot2

RoxygenNote 6.1.1

VignetteBuilder knitr

URL https://github.com/jsilve24/RcppHungarian

NeedsCompilation yes

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Repository CRAN

Date/Publication 2022-01-26 18:12:46 UTC

R topics documented:

HungarianSolver *Hungarian Algorithm Solver*

Description

Solves weighted bipartite matching problems (e.g., optimal matching of people to cars or optimal matching of students to colleges, etc...)

Usage

```
HungarianSolver(costMatrix)
```

Arguments

costMatrix	matrix giving cost of each possible pairing - can be rectangular

Details

this is a copy/wrapper for the code developed by Cong Ma and made available as a github repository (mcximing/hungarian-algorithm-cpp). Code was changed to a header only file for use in other Rcpp packages.

Value

List with cost and parings, pairings are given as an Nx2 matrix giving edges that are matched (1-indexed rather than 0-indexed as it will be returned to R)

Examples

```
cost <- rbind(c(1, 2, 0),
              c(2, 0, 1),
              c(1, 4, 19))
soln <- HungarianSolver(cost)
soln
```

RcppHungarian_package *RcppHungarian*

Description

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Index