AI Project2: Development of an efficient CARP solving agent based on a variant of MAENS with limited computational budget
AI 项目2: 算时受限情形下的基于带扩展邻居搜索的文化基因演化变种方法的容
量约束弧路径问题的求解智能体的开发

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note: As **"Project-CARP.pdf" just required "A solver description" with " the core idea of your design, explanation each component of your algorithm, illustration of the algorithm structure and the pseudo code"**, this submit version report is as simple as possible. For detailed report with literature review\work flow\detailed experiment design, you can view the detailed version of this document.

1   Introduction

Capacitated Arc Routing Problem (CARP) is a well known combinatorial problem that requires the identification

2   Methodology

2.1   Software architecture

2.2   Model design

```
Function Budget-Limited-MAENS(pop_size, budget, pr_ls)
    will return an evolved population
    inputs:
        pop_size: population size as the evolution algorithm
        budget: the maximum number of function evaluations(MFE)
        pr_ls: probability for local search

    Q = new Population()
    while evaluated <= budget do
        Apply MSA inspired selection operator to select pop_size/2 pairs of
parents
        Save the common trips of each pair of parents, keep the different part of
each pairs, i.e., a set of edges that contains different trips, as P *


    end while
```

References