1 Introduction

The standard TSP is defined as follows:

\[ \text{} \]

The maximum scatter TSP is a variant defined as follows:

\[ \text{} \]

An example of the max-scatter TSP is as follows:

\[ \text{} \]

The goal of this report is to evaluate different algorithms for solving the max-scatter TSP based on Ant Colony System, compared against baseline algorithms. In doing this, we will use some OpenSource software for ACS-TSP, blah blah.

Section 2 examines the software as applied to the TSP, using as data TSPLIB (Section 2.1); presents an alternative, non-ACS-based algorithm (Section 2.2); and compares the two results (Section 2.3). Section 3 then adapts this to the max-scatter TSP, using an adaptation of ACS (Section 3.1); presents an alternative, non-ACS-based algorithm (Section 3.2); and compares the results of these two max-scatter algorithms (Section 3.3).

2 The TSP

2.1 ACS-TSP on TSPLIB

We installed the software and found that blah blah.

We selected as test data from TSPLIB the following graphs:

\[ \text{} \]

The parameters were set as follows:

\[ \text{} \]

The results were as follows:

\[ \text{} \]

2.2 Non-ACS Algorithm

The basic idea behind the algorithm in this section is blah blah.

The algorithm is then, schematically,

\[ \text{} \]

The results were as follows:

\[ \text{} \]
2.3 Comparison

To compare the two sets of results, we used the statistical tests BLAH BLAH. These showed that

: 

3 Maximum Scatter TSP

3.1 ACS for Max-Scatter TSP

From the basic TSP, the fundamental modification is BLAH BLAH. In the BLAH BLAH code, the major changes are found in the following files:

: 

We constructed some test data, to be found in BLAH BLAH. The parameters were set as follows:

: 

The results were as follows:

: 

We also selected as test data from TSPLIB the following graphs:

: 

The parameters were set as follows:

: 

The results were as follows:

: 

3.2 Non-ACS Algorithm

The basic idea behind the algorithm in this section is BLAH BLAH. The algorithm is then, schematically,

: 

The results were as follows:

: 

3.3 Comparison

To compare the two sets of results, we used the statistical tests BLAH BLAH. These showed that

: 

4 Discussion

A general approach for a heuristic for the max-scatter TSP is BLAH BLAH. This can be incorporated into ACS by BLAH BLAH. To test its effectiveness, we also presented as a comparison algorithm BLAH BLAH. The ACS version can then be seen to be BLAH BLAH.