Simple Algorithms to Solve MAX-SAT and TSP

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ABSTRACT

We present the solution to two classical problems like MAX-SAT, or its 3-SAT partial case, and TSP from computational complexity theory using subset construction.

Keywords: Algorithm, Solution, Subset Construction, TSP, MAX-SAT.

INTRODUCTION

The problem was stated before in [1], MAX-SAT is also well-studied in [2, 3], as well as TSP in [4, 5]. We give the exact algorithms to these problems using subset construction [6].

ALGORITHMS

For MAX-SAT problem we simply assign an alphabet symbol to each variable and its value from the set of {0, 1}, then we apply the &-operator for each of the clause in MAX-SAT, thus, solving it in polynomial time.
For TSP we are using counter tags in finite automata and also apply &-operator as in our previous local search algorithm.

CONCLUSION

We have given linear algorithm for MAX-SAT and poly-logarithmic for TSP.

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