

## An Improved Genetic Algorithm for Traveling Salesman Problem with Precedence Constraint

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**Abstract :** Traveling salesman problem with precedence constraint (TSPPC) is one of the most complex problems in combinatorial optimization. The existing algorithms to solve TSPPC cost large computational time to find the optimal solution. The purpose of this paper is to present an efficient genetic algorithm that guarantees optimal solution with less number of generations and iterations time. Unlike the existing algorithm that generates priority factor as chromosome, the proposed algorithm directly generates sequence of solution as chromosome. As a result, the proposed algorithm is capable of generating optimal solution with smaller number of generations and iteration time compare to existing algorithm.

**Keywords :** traveling salesman problem, sequencing, genetic algorithm, precedence constraint

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