

Route guidance system based on self adaptive multiagent algorithm

Abstract

Nowadays, self-adaptive multi-agent systems are applied in a variety of areas, including transportation, telecommunications, etc. The main challenge in route guidance system is to direct vehicles to their destination in a dynamic traffic situation, with the aim of reducing the traveling time and to ensure and efficient use of available road networks capacity. In this paper we propose a self-adaptive multi-agent algorithm for managing the shortest path routes that will improve the acceptability of the costs between the origin and destination nodes. The proposed algorithms have been compared with Dijkstra algorithm in order to find the best and shortest paths using a sample of Tehran road network map. Two cases have been tested on the simulation using the proposed algorithm. The experimental results demonstrate that the proposed algorithm could reduce the cost of vehicle routing problem.