Abstract

The main goal of this work is to consider the problem of path optimization between the sender and receiver in a dynamic mobile network. A new adaptive algorithm based on Evolutionary technique called Genetic Algorithm (AGA) has been proposed to find out the Optimal Path in dynamic nature problem. In this paper, the proposed AGA for solving the shortest path routing problem is presented to find the shortest path in a mobile wireless networks to satisfy the minimum end-to-end delay quality of service (QoS). The proposed algorithm provides the solution of optimal path using a technique that is inspired by the natural process that is initial population, selection crossover and mutation. The proposed AGA uses a multiple selection methods to improve the performance of particular implementations. Simulations have been done using both MATLAB and Visual basic environments and the results show that the proposed algorithm performs excellently by finding a path with minimum end-to-end delay between source and destination; it finds the shortest path in dynamic environment efficiently and quickly adapts to the environmental changes (i. e. , the network topology change) and produces good solutions after each change.
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**Index Terms**

Computer Science  Wireless

**Keywords**

Quality of Service (QoS)  mobile networks  end-to-end delay  network traffic  networks nodes  evolutionary optimization.