

NEW MATHEMATICAL MODEL USING RLGAMAN FOR QUALITY OF SERVICE IMPROVEMENT IN MOBILE ADHOC NETWORKS

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Abstract

Mobile Ad hoc Networking is a challenging task due to the lack of resources residing in the network as well as the frequent changes in network topology. QoS support for mobile ad hoc networks (MANET) remains an open problem, drawing interest from both academia and industry under military and commercial sponsorship. MANETs have certain unique characteristics that pose several difficulties in provisioning QoS, such as dynamically varying network topology, lack of precise state information, lack of central control, error-prone shared radio channels, limited resource availability, hidden terminal problems, and insecure media, and little consensus yet exists on which approaches may be optimal. In response to the above demand for mobile ad hoc networks, this special issue aims at providing a timely and concise reference of the current activities and findings in the relevant technical fields, and focuses as well on the state-of-the-art and up-to-date efforts in design, performance analysis, implementation and experimental results for various QoS issues in MANETs. This Paper discusses the new Mathematical Model using Reinforcement Learning (RL) and Genetic Algorithm (GA) in Mobile Ad hoc Networks (MANET). In order to reduce average cost in flooding path discovery scheme of the traditional MANETs routing protocols and increase the probability of success in finding QoS feasible paths we proposed a heuristic and distributed route discovery method named RLGAMAN that supports QoS requirement for MANETs in this study. We believe that all of this paper not only provide new mathematical model and handful experience in this field, but also simulate the results in the Network Simulator (NS2) Environment for ease of future research activities in the area of the quality of service for mobile ad hoc networks.

Keywords : Quality of Service, RLGAMAN, Genetic, Routing Algorithms and Mobile Ad hoc Networks, Mathematical Model, Simulation Results