

FUZZY-BASED TRUSTWORTHINESS EVALUATION SCHEME FOR PRIVILEGE MANAGEMENT IN VEHICULAR AD HOC NETWORKS

ABSTRACT

The vehicular ad hoc network (VANET) is a type of mobile wireless networks, where vehicles are allowed to broadcast a message to its neighbors and access data from other participants. However, how to guarantee the reliability of these broadcast messages and prevent malicious vehicles from accessing the private data of the VANETs is still an open problem to be solved. As a countermeasure, a fuzzy-based trustworthiness evaluation scheme for privilege management in VANETs is proposed in this article. In the proposed scheme, to ensure the result of trustworthiness is valid, mutual authentication with conditional anonymity between the evaluator and the vehicle to be evaluated is first employed. Then, based on the vehicle's behavioral big data, the trustworthiness of each vehicle is evaluated by utilizing the fuzzy theory. Note that the privilege of a vehicle and the reliability of the vehicle's messages are determined by its trustworthiness. Moreover, the mobility of vehicles is also considered in this project, since the location of a vehicle is not constant and the monitoring area of an road side unit is limited.