

RD4: Role-Differentiated Cooperative Deceptive Data Detection and Filtering in VANETS

The data quality of collected sensing data, which determines the practical value of sensing systems, has been studied in several previous efforts; however, we argue that vehicular ad hoc networks (VANETs), which are a particular application of highly dynamic sensing systems, requires specific treatments to guarantee data quality. In this paper, we design a mechanism, i.e. RD4, which is a role -differentiated cooperative deceptive data-detection and filtering mechanism, to detect the false data in VANETs. RD4 is evaluated using an extended traffic simulator. Three scenarios, i.e., freeway, road construction on a highway, and a traffic light on a local street, are deployed in general. Evaluation results show that the proposed mechanism can achieve more than 90.00% recall and precision rate in most cases.