

车载自组网中基于路侧单元预测的可靠路由算法

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摘要: 现有利用地图和 RSU(Roadside Unit)辅助的路由算法在利用 RSU 对目的节点的位置进行预测过程中, 没有考虑节点速度为零, 导致对目的节点的预测范围不准, 且 RSU 在对节点进行预测后, 利用地图选取的到目的节点的最短路径不是最优路径, 对此提出 RRRP (Reliable Routing with Roadside-aided Prediction in Vehicular Ad Hoc Networks) 机制. RRRP 采用可靠预测机制, 确保数据包的成功发送, 利用密度感知机制, 使 RSU 计算的到目的节点的路径是最优路径. 仿真结果表明, RRRP 机制能有效提高数据的传送成功率和吞吐量, 降低消息的平均端到端时延.

关键词: 车载网络; 贪婪转发; 可靠预测; 密度感知

Reliable Routing with Roadside-aided Prediction in Vehicular Ad Hoc Networks

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Abstract: To solve the problem that the existing routing algorithms, which use digital map and roadside units, have not considered the situation that the node's velocity is zero with roadside-aided predicting the node's destination. The situation will cause the prediction range out of date. And the route using the digital map to construct, which is made up of the shortest roads, is not the most optimal routing path. A Reliable Routing with Roadside-aided Prediction in Vehicular Ad Hoc Networks (RRRP) is proposed. RRRP use the reliable prediction and density aware mechanism to make sure the data successfully delivered to the destination. The simulation shows that RRRP can improve the packet deliver ratio and the throughput, reduce the end to end delay.

Key words: Vehicle Ad-hoc Networks; GPSR; reliable prediction; density aware

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