Summaries of Papers on Urban Transportation

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1 Vehicular Networks in Urban Transportation Systems & MDDV: A Mobility- Centric Data Dissemination Algorithm for Vehicular Networks

In these closely related papers, the authors describe their design and test of a network enabling smart cars. They argue that a significant challenege associated with achieving useful smart vehicles is to have a strong and reliable networking system between them. In the second paper, they present MDDV, which they assert can be that network. They develop the algorithms mostly for Vehicle to Vehicle, or V2V, systems. They differentiate V2Vs from traditional ad-hoc networks due to the mobility of nodes, and the possibility to be highly partitioned, among others. MDDV takes on these challenges with an approach that "combines opportunistic forwarding, geographical forwarding, and trajectory based forwarding" of information. Furthermore, they tested this system using prototype hardware in the Atlanta metro area, with promising results.

2 Overview on Security Approaches in Intelligent Transportation Systems: Searching for hybrid trust establishment solutions for VANETs

This paper provides a broad overview and analysis of currently proposed solutions to the security network issues in Vehicular Ad-hoc Networks (VANETs). After exploring both centralized and decentralized solutions the paper goes on to demonstrate that a hybrid approach, currently underrepresented, may be vital to developing a sustainable and efficient security architecture for Intelligent Transportation Systems (ITS).

3 The Performance of a Crowdsourced Transportation Infomration System

This paper provides an overview of the existing landscape with respect to mass transit vehicle arrival prediction systems, discussing issues with GPS and normal linear regression-based predictions. It proceeds to go into analysis on the benefit and drawbacks of including crowdsourced data to help augment the predictions generated from both live vehicle data and from historical vehicular data.