Project DRIVE-IN (http://drive-in.cmuportugal.org/)

Context

As positioning devices, sensing technologies and wireless interfaces become standard commodities, all sorts of vehicles such as cars, buses and trucks will soon be able to operate in a networked fashion, sharing vital information ranging from traffic congestion data to accident alarm signals and making navigation and safety decisions based on the messages they receive from neighboring nodes. In addition, vehicle-to-vehicle communications open a myriad of new applications, including location-based information dissemination, vehicle-based social networking and distributed interactive games.

Objectives of the Project

The goal of DRIVE-IN project is to investigate how vehicle-to-vehicle communication can improve the user experience and the overall efficiency of vehicle and road utilization. In the end of 2010, and in the framework of DRIVE-IN, 460 taxis will be connected through wireless communications in Oporto.

Objectives of the PhD Work

One of the objectives of the project with respect to the networking aspects is to devise context-aware VANET communication protocols capable of leveraging the rich data sets provided by GPS receivers, such as position information, roadmap geometry, and traffic conditions, thus improving the utilization of the wireless medium and providing higher quality of service for a wide range of applications. The work to be pursued in the proposed PhD Thesis will deal mainly with traffic and flow control issues and information dissemination and replication according to the network conditions and requirements of users.

Responsible of the Project:

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Candidate Student Profile

The candidates shall have knowledge, experience and interest in the area of communication networks, with relevance on self-organizing aspects.