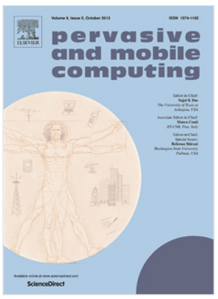
Accepted Manuscript



Vehicular Social Networks: A survey

Azizur Rahim, Xiangjie Kong, Feng Xia, Zhaolong Ning, Noor Ullah, Jinzhong Wang, Sajal K. Das

PII: S1574-1192(17)30079-2
DOI: https://doi.org/10.1016/j.pmcj.2017.12.004
Reference: PMCJ 910

To appear in: *Pervasive and Mobile Computing*

Received date : 6 February 2017
Revised date : 8 November 2017
Accepted date : 11 December 2017

Please cite this article as: A. Rahim, X. Kong, F. Xia, Z. Ning, N. Ullah, J. Wang, S.K. Das, Vehicular Social Networks: A survey, *Pervasive and Mobile Computing* (2017), https://doi.org/10.1016/j.pmcj.2017.12.004

Vehicular Social Networks: A Survey

Azizur Rahim[a], Xiangjie Kong[a,*], Feng Xia[a], Zhaolong Ning[a], Noor Ullah[a], Jinzhong Wang[a], Sajal K. Das[b]

[a] *School of Software, Dalian University of Technology, Dalian 116620, China*
[b] *Department of Computer Science, Missouri University of Science and Technology, Rolla, MO, USA*

Abstract

A Vehicular Social Network (VSN) is an emerging field of communication where relevant concepts are being borrowed from two different disciplines, i.e., vehicular ad-hoc networks (VANETs) and mobile social networks (MSNs). This emerging paradigm presents new research fields for content sharing, data dissemination, and delivery services. Based on social network analysis (SNA) applications and methodologies, interdependencies of network entities can be exploited in VSNs for prospective applications. VSNs involve social interactions of commuters having similar objectives, interests, or mobility patterns in the virtual community of vehicles, passengers, and drivers on the roads. In this paper, considering social networking in a vehicular environment, we investigate the prospective applications of VSNs and communication architecture. VSNs benefit from the social behaviors and mobility of nodes to develop novel recommendation systems and route planning. We present a state-of-the-art literature review on socially-aware applications of VSNs, data dissemination, and mobility modeling. Further, we give an overview of different recommendation systems and path planning protocols based on crowdsourcing and cloud-computing with future research directions.

Keywords: Vehicular social networks, Selfishness, Security, Transportation, Socially aware networking, Recommendation systems

*Corresponding author
Email address: xjkong@ieee.org (Xiangjie Kong)