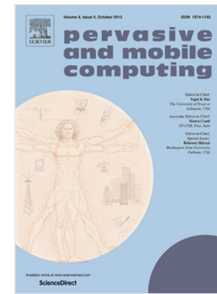


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Federico Montori, Prem Prakash Jayaraman, Ali Yavari, Alireza Hassani, Dimitrios Georgakopoulos



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The Curse of Sensing: Survey of Techniques and Challenges to cope with Sparse and Dense Data in Mobile Crowd Sensing for Internet of Things

Federico Montori^a, Prem Prakash Jayaraman^b, Ali Yavari^b, Alireza Hassani^c,
Dimitrios Georgakopoulos^b

^a*Department of Computer Science and Engineering (DISI), University of Bologna, Italy*

^b*Department of Engineering, Swinburne University, Melbourne, Australia*

^c*Faculty of Information Technology, Monash University, Melbourne, Australia*

Abstract

In this paper we present a survey on mobile crowdsensing (MCS) techniques that have been developed to address the *Curse of Sensing* problem i.e. propensity of MCS applications to generate sparse or dense data that can lead to significant gaps in the extracted knowledge. In order to do so, we identify features, based on the terminologies used in the literature, in order to develop a clear classifications among MCS and crowdsourcing applications and methods. Subsequently, we propose a taxonomy outlining both factors and objectives that need to be considered in designing MCS systems and have a direct impact on MCS applications' tendency to fall into the *Curse of Sensing*. We then evaluate the majority of the research proposed in the field of MCS and addressing the *Curse of Sensing* problem with reference to the proposed taxonomy. Finally, we highlight the existing gaps in the literature and possible directions for future research.

Keywords: Internet of Things (IoT), Mobile Crowdsensing (MCS), Context Awareness, the Curse of Sensing

1. Introduction

According to Ericsson's Mobility Report [1], the total number of mobile phone subscriptions as of 2017 has equaled the world population (7.6 billion).

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