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Foreword: Mobility and Social Networks Confluence

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Mobile devices, wearables and wireless sensor networks have been lately used to monitor and sense real world. On one hand, processing of information that has been sensed in the real world has been used for a wide set of applications. These applications include detection of human activities, environmental and urban state monitoring, estimation of healthcare conditions, proximity and concentrations of people, epidemic trends, network and routing planning and other natural and human-generated situations describing aspects of the physical world. On the other hand, the evolution of the web in terms of user-generated content, crowd sourcing and the proliferation of online social networks have generated tremendous amount of information, describing dynamic interaction among people and their surroundings in both, digital (online) and real worlds, making people-generated information to become a new type of virtual sensor. In this respect, the amount of information available from the connected world, either belonging to virtual or to physical sources, can describe aspects of reality in a detailed manner if both sources are combined. The kind of dynamics that the integration of digital and physical worlds may generate will have an impact at different levels, involving the humansocial-environmental dimensions as well as at the network organization. In this regard, a set of novel research challenges will arise for dealing with such integration of information. This Special Issue was planned to report advances on applications, methods and approaches envisioning to address the new challenges in this field.

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The selected papers are roughly summarized as below:

The following four papers would contribute to application aspects in the mobile and social networks confluence. The paper titled “Information Propagation through Opportunistic Communication in Mobile Social Networks” presents a theoretical framework to evaluate the performance of information propagation mobile social networks formed by short range communication technologies. The paper titled “Social and Content Hybrid Image Recommender System for Mobile Social Networks” proposes a hybrid image recommender system, which combines collaborative filtering (social techniques) with content-based techniques. The paper titled “Selective Data Deactivation Mechanism in Sustainable Area-based Cache for Mobile Social Networks” presents a resilient mechanism for the proposed area-based distributed mobile cache system under a temporary decrease of the number of terminals. The paper titled “Trigger detection using geographical relation graph for social context awareness” discusses a trigger detection mechanism based on a mixed graph-based representation model able to encode geographical and social relationships among people and social objects like stores, restaurants, and event spots. The rest of the selected papers are efforts on more fundamental issues, i.e., measurement and analysis in the mobile and social networks confluence. The paper titled “Analysis of Social Interactions through Mobile Phones” discusses the feasibility of using two parameters that can be detected through mobile phone sensing, namely interpersonal distance and relative body orientation, to provide a solid basis for inferring social interactions. The paper titled “ Urban 802.11 Community Networks for Mobile Users: Current Deployments and Prospective” analyzes the deployment and the performance of wireless networks in an urban environ- in order to measure the potential of currently available networks for providing Internet connectivity for mobile users.

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