

Guest Editorial: Advances in Mobility Services and Protocols for Cognitive and Ubiquitous Applications

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With the ever-increasing number of mobile, smart devices and applications, mobility services have become an important issue in recent research and is attracting the attention of many researchers and developers from mobile and computing domain. Current research efforts try to advance the state in the art in the definition, discovery and use of advanced mobile services for transportation systems, patterns of user mobility, dynamic service management, computer forensics and cognitive ubiquitous applications.

Due to the importance of mobility services and protocols for cognitive and ubiquitous applications, we edit this special issue, which collects high quality papers that cover and discuss different aspects of mobile services and applications. The main focus of the selected articles is on technical approaches to analyze and propose new mobile services for a wide range of applications. The special issue consists of six high quality papers carefully selected after a strict review process during several rounds of review. The special issue is organized as follows.

The first article [1], “*Omnibone: An Efficient Service Data Circulation and Discovery Scheme in VANETs*” by Chyi-Ren Dow, Yu-Hong Lee, Pa Hsuan, Yi-Tung Lee, and Shioh-Fen Hwang, proposes schemes to effectively circulate and discover service information with the aid of public transportation systems. The authors have proposed an architecture based on bus routes that can effectively disseminate and discover the required data through the traffic infrastructure and mobile vehicles.

The second article [2], “*Behavioural Patterns Analysis of Low Entropy People Using Proximity Data*” by Muhammad Awais Azamy, Jonathan Loo, Sardar Kashif Ashraf Khan, Usman Naeem, Muhammad Adeel, and Waleed Ejaz, aims to find repeated patterns in daily life activities and individual behaviours from wireless proximity data (Bluetooth proximity data). Their approach showed the usefulness for activities and behaviour detection of individuals for both short term daily routines and the long term routines.

The next article [3], “*Rethinking IP Mobility Management*” by Karl Andersson and Muslim Elkotob, overviews existing solutions and suggests a new distributed and dynamic mobility management scheme. For that, the authors have analyzed existing protocols such as the GPRS Tunneling Protocol (GTP), Mobile IP, Proxy Mobile IP, and the Locator/ Identifier Split Protocol (LISP). The proposed scheme is then evaluated against existing static approaches.

In [4], “*Digital scene of crime: technique of profiling users*” by Clara Colombiniy and Antonio Colella, investigates a method of computer forensics for analyzing digital memories of electronic devices. The method is used for reconstructing the users’ identity from the “digital footprints of users” discovered on the device, such as personal computers, mobile phones, storage areas, etc. Their approach is useful in operations against organized crime, anti-terrorism and intelligence operations.

The next article [5], “*Never Die Network Based on Cognitive Wireless Network and Satellite System for Large Scale Disaster*” by Noriki Uchida, Kazuo Takahata, Yoshitaka Shibata, and Norio Shiratori, has proposed a Never Die Network, which consists of a Cognitive Wireless Network and a Satellite Network. The authors have identified a cognition cycle and then have proposed optimal link selection using the extended Analytic Hierarchy Process methods. The proposed approach is validated through simulation by comparing a single ordinal wireless network system and a Cognitive Wireless Network for the disaster situations.

The last paper [6], “*Enhancing Smart Grid System Processes via Philosophy of Security – Case Study based on Information Security Systems*” by Amy Poh Ai Ling, Sugihara Kokichi, and Mukaidono Masao, identifies and analyzes variables that could enhance the information security system for the smart grid. The authors have used questionnaire surveys, followed by detailed, descriptive analysis. The study showed the ranking of information security consumer requirements being the concern for privacy the most important among identified requirements. The proposed approach can support utility providers or policy makers to strengthen information security systems of the smart grid.

I would like to thank all authors for submitting their papers and their timely work in carefully revising and improving the manuscripts based on interesting and constructive feedback by reviewers. I would like to greatly appreciate the efforts of reviewers for the careful and detailed review of the papers during several rounds of review. At last, I would like to extend my special thanks to Dr. Ilsun You, the Editor-in-Chief of *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications*, for the invitation to edit this special issue and his support for its timely publishing.

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September 2012

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