

Editorial from the Editor-in-Chief

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On behalf of the Editorial board, we welcome you to the sixteenth issue of the EAI Endorsed Transactions on Context-Aware Systems and Applications. In this issue, we present four selected papers that span various aspects of context-aware systems and applications.

This issue will serve as a reference material for researchers, scientists, professionals and students in computer science and computer engineering as well as developers and practitioners in computing and networking systems design by providing them with state-of-the-art research findings and future opportunities and trends. These papers include some recent advances in context-awareness reflected in this issue. In particular, the issue covers various themes of context-awareness as follows:

Paper 1 by Hoang Tan Nguyen, Lan Phuong Phan, Hung Huu Huynh and Hiep Xuan Huynh reports that association rules based recommendation is one of approaches to develop recommendation systems. However, such systems just focus on binary dataset, whereas many datasets are in the quantitative form. There are many solutions proposed for this problem such as combining the association rules mining with fuzzy logic, binarizing quantitative data, etc. These proposals have contributed to improving the performance of traditional association rules mining, however, they have to deal with the trade-off between the processing performance and the loss of information. In this paper, authors propose a new approach to make recommendations based on implication rules. The experimental results show that the proposed solution can be implemented well on quantitative dataset as well as improve the accuracy and performance of the recommendation systems.

Paper 2 by Vahid Hajhashemi, Zeinab Hassani, Iman Sahraei Dehmajnoonie and Keivan Borna reports that liver disease is one of the most common diseases which can be prevented by early diagnosis and

up-to-date treatment. Advances in machine learning and intelligence techniques have led to the effective diagnosis and prediction of diseases to improve the treatment of patients and reduce the cost of treatment. Whale Optimization Algorithm (WOA) is a swarm intelligent technique, inspired by the social behavior of whales. One of the effective classification algorithms is K-Nearest Neighbor (KNN) which is employed for pattern recognition. This paper is designed to investigate the prediction of liver disease using a hybrid algorithm including KNN and WOA. In order to evaluate the efficiency of hybrid algorithm, two datasets of liver disease including BUPA and ILPD are used. The results show that 81.24% and 91.28% of accuracy are gained by the proposed algorithm for BUPA and ILPD, respectively. Experimental results show that the hybrid WON-KNN is a better classifier to predict the liver diseases.

Paper 3 by Vu Tuan Anh, Pham Quoc Cuong and Phan Cong Vinh presents that the rapid growth in Internet of Thing (IoT) yields big data that require management, computing, authentication, and analysis. In the first step of IoT, the static things are connected together such as: sensors, cameras, vending machine and so on. The things just need static IP address to manage and collect data easily. The next step of IoT, the mobile things such as: cellphones, patients, vehicles and so on are more difficult. Besides the dynamic IP, the mobility things yield challenges to mobile data collection, mobile data analysis, energy management, and security and privacy. In this paper, authors make a survey of context-aware mobility in IoT. First, The mobile data collection means the contexts of users that are collected due to cellphone, or google android devices, have ability to send a signal over mobile network. Next, The mobile data analysis helps to classify the context for authenticating and analyzing. The energy management helps battery of devices to work in the long time and improve effect of the communication in IoT. All processes need a framework as MobilityFirst Future Internet Architecture. The final

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challenge in IoT is security and privacy infrastructure when the mobile things move from one area to another.

Paper 4 by Momil Ijaz, Huma Urooj and Muhammad Athar Javed Sethi reports that on-chip bus-based communication has many shortcomings to it, including resource sharing, delay, latency and cost (power and area). Network on Chip (NoC) is an innovation that is planned to eliminate the shortcomings to buses such as compact systems, size, speed, power and area. The goal of working is to design a usable and researchable general-purpose 2x2 mesh NoC architecture, which is not application specific, and optimizes area and power. Desired NoC is coded and deployed on FPGA Spartan-3 kit in a generic mode, with the efficient area and power utilization than traditional deployments.

For the preparation of this sixteenth issue we would like to acknowledge the work of all our Editors, reviewers and authors who have positively supported this publication. We will be happy to receive from our readers any suggestions, including possible proposals for future issues, which may contribute to further maintain the high scientific quality and relevance of this journal.

We hope you will find this sixteenth issue provoking for your research in the field of context-awareness and being useful to your future work.

About the Editor-in-Chief

Phan Cong Vinh received a PhD in computer science from London South Bank University (LSBU) in

the United Kingdom. He finished his PhD dissertation with the title of “Formal Aspects of Dynamic Reconfigurability in Reconfigurable Computing Systems” at LSBU where he was affiliated with the Center for Applied Formal Methods (CAFM) at the Institute for Computing Research (ICR). At present,



he is an Associate Professor of Nguyen Tat Thanh University (NTTU) to take on the responsibility of a senior research scientist. He has been author or co-author of many refereed contributions published in prestigious journals, conference proceedings or edited books.

He is editor of three books titled, “Autonomic Networking-on-Chip: Bio-Inspired Specification, Development and Verification” (CRC Press, 2012), “Formal and Practical Aspects of Autonomic Computing and Networking: Specification, Development and Verification” (IGI Global, 2011) and “Nature-Inspired Networking: Theory and Applications” (CRC Press, 2018). He has served on many conference program committees and has been general or technical (co)chair and (co)organizer of several international conferences such as ICCASA and ICTCC series. His research interests center on all aspects of formal methods in computing, context-awareness, nature of computation and communication, and applied categorical structures in computer science.