# Editorial from the Editor-in-Chief

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On behalf of the Editorial board, we welcome you to the seventeenth 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 Nghi Cong Tran, An Cong Tran, Nguyen Huu Van Long and Hiep Xuan Huynh reports that as brown plant hopper (BPH) is one of the most dangerous kinds of insect for rice plant, in recent years, there has been increased concern in counting them in light trap images to control their spread in order to reduce their damage on rice plant. This paper proposes an approach to counting BPHs in light trap images based on morphological operations. By applying these operations appropriately, combined with some noise removal techniques based on color, BPHs in the light trap images can be identified. In addition, it is common that the BPHs in the light-trap images are overlapped due to the layout of the light trap. Therefore, an approach to counting the overlapped BPHs based on their size is also introduced while the sequential region labeling algorithm is used to count the number of the separate BPHs. The experimental results show that the proposed approach is suited to identifying and counting the BPHs in images which are overlapped.

Paper 2 by Vo Thi Hong Tuyet, Nguyen Mong Hien, Pham Bao Quoc, Nguyen Thanh Son and Nguyen Thanh Binh reports that image retrieval system is an urgent issue in medicine. In the past, traditional image retrieval system based solely on the label of images and gave limited results. To reduce this disadvantage, the content-based medical image retrieval has been developed. However, this system still has many challenges. In this paper, authors propose a new method for content-based medical image retrieval. The proposed method includes two stages: the offline task and online task in medical image database. In the first stage, authors extract local object features of medical images in shearlet domain. Then, authors detect the contour of object in images by active contour model. In the second stage, authors make online task for content-based image retrieval in database. The system receipts a query image and shows the similar in images by similarity comparison with the information collected from the first stage. Experimental results show that the proposed method is better than the other methods.

Paper 3 by Tri Minh Huynh, Tai Huu Pham, Vu The Tran and Hiep Xuan Huynh presents that discovering knowledge in archival data is the goal of researchers. For the goal, collaborative filtering recommender system is developing rapidly today. It may be rather effective in sparse and "long tail" datasets. Calculating to make decision based on many criteria is really necessary. Relationships, interactions between criteria need to be fully considered, decision will be more reliable and feasible. In this paper, authors propose a new approach that builds a recommender decision-making model based on importance of item, set of items with Shapley value. This model also incorporates with traditional techniques and some their new approaches and is tested, evaluated on multirecsys tool, which authors develop from some available tools, and uses standardized datasets to experiment. Experimental results show that the proposed model is always satisfactory and reliable. They can be applied in appropriate contexts to minimize limitations of recommender system today and is a research way next time.

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Paper 4 by Ahmad Saeed Shah and Muhammad Athar Javed Sethi reports that whenever it comes to data processing, the user always faces two major constraints. One is storage capacity and second is bandwidth. These two resources must be efficiently utilized by compressing the data. Enormous algorithms are used to compress data. As far as, compression in storage is concern, GZIP is used on large scale for lossless data compression. However, it is not desirable to carry out lossless data compression for real time data. In this paper, an improvisation is proposed in the existing GZIP algorithm for compressing real time data by a contemporary concept of introducing Adaptive Huffman algorithm by replacing the traditional Huffman encoder (static). Simulations show that improvised GZIP has approximate 18% better compression ratio and space saving than traditional GZIP for real time data. This research paper extends the usability of GZIP algorithm to carry out lossless compression for real time data.

For the preparation of this seventeenth 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 seventeenth 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.