Editorial from the Editor-in-Chief

Phan Cong Vinh

Faculty of Information Technology at Nguyen Tat Thanh University
300A Nguyen Tat Thanh street, Ward 13, District 4, Ho Chi Minh City, Vietnam

On behalf of the Editorial board, we welcome you to the twenty second 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 Preeti Khanwalkar and Pallapa Venkataram [3] reports that recent advances in ubiquitous computing technologies have enabled anywhere, anytime personalized services to the museum ubiquitous visitors without any explicit requests. The system utilizes visitor, device, network, and other application related context information to provide required services to the museum ubiquitous visitors. In this work, authors propose the formation of Essential Context-derived Reasons (ECR) from the context information of the museum ubiquitous visitors, which enables to provide required exhibit information museum services to the visitors. The simulation results show that the accuracy of ECR increases with the increase in reference structures of multiple combinations of accurately available context information of the museum ubiquitous visitors, which further enables to provide required exhibit information museum services to the visitors.

Paper 2 by Nguyen Van Han and Phan Cong Vinh [2] reports that authors study linguistic fuzzy graph properties which consist of fuzzy paths, cut vertex and bridge. Authors use hedge algebra and linguistic variables for modeling to reduce complexity in computation. Modeling the Illegal immigration problem is also introduced.

Paper 3 by Aarif Mawani and Lawrence Nderu [4] presents that today's society mental health is becoming increasingly important. As a result, more and more individuals need guidance and counseling. This care giving becomes even more important in a person's life during times of hardship, for instance during pandemics like COVID-19 where social isolation makes it even more difficult to cope with mental anguish. Whereas there exist various interventions, guidance and counseling activities are not easily accessible for resource stricken communities and where it exists, then its efficacy is hard to measure. With appropriate guidance voluntary counselors could assist fill the void for such societies and provide counseling to them for various mental anguishes thereby providing relief for such conditions some of which are quite debilitating. The main objective of this paper is to encourage the uptake of counseling services to resource stricken communities in particular, by leveraging technology resulting in an increased "counseling culture" that has empathy at its core. An online web-based application that provides a counselor the platform to provide "counseling services" to persons in distress by way of chat discourses. These chat discourses are then filtered through the IBM Watson platform providing natural language processing (NLP) and Artificial Intelligence capabilities to undertake lexical analysis in order to derive the emotional measure of the empathy level adopted in a chat discourse. As a result of the analysis, important statistical components like Precision and Recall are adopted in measuring the performance of the solution in terms of measuring, for instance, empathy inclusivity. Once Precision and Recall values are derived, the F1 score is calculated.

Paper 4 by Khurshid Ahmad and Muhammad Athar Javed Sethi [1] reports that System on chip (SoC) is an integrated circuit in which components are communicating through the bus interconnection

---

*Corresponding author. Email: pcvinh@ntt.edu.vn

system. Network on chip (NoC) is a communication network for a multiprocessor system on chip (MPSoC). In NoC architecture node/ component of MPSOC are communicating through a network. The performance of NoC architecture depends on topology, routing algorithm and switching technique. In this paper, different NoC routing algorithms are reviewed using basic parameters of NoC architecture and also provide some information about these parameters. It is concluded that most of the researchers are interested in design of the NoC routing algorithm, which efficiently transmits data from source to destination. When the routing algorithm is congestion aware, fault-tolerant, deadlock-free and livelock free, then the latency of algorithm decreases and throughput increases.

For the preparation of this twenty second 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 twenty second 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.

References

[1] Khurshid Ahmad and Muhammad Athar Javed Sethi. Review of network on chip routing algorithms. *EAI Endorsed Transactions on Context-aware Systems and Applications*, 7(22), 12 2020.

[2] Nguyen Van Han and Phan Cong Vinh. Toward computing linguistic fuzzy graphs and applying to illegal immigration problem. *EAI Endorsed Transactions on Context-aware Systems and Applications*, 7(22), 9 2020.

[3] Preeti Khanwalkar and Pallapa Venkataram. Essential context-derived reasons formation from context information of museum ubiquitous visitors. *EAI Endorsed Transactions on Context-aware Systems and Applications*, 7(22), 9 2020.

[4] Aarif Mawani and Lawrence Nderu. Towards an online empathy assisted counselling web application. *EAI Endorsed Transactions on Context-aware Systems and Applications*, 7(22), 12 2020.