

Guest Editorial

Special Issue for JCSSE 2019

Jou-Ming Chang, Kosin Chamnongthai, Bibudhendu Pati

The 16th International Joint Conference on Computer Science and Software Engineering (JCSSE 2019) held on July 10-12, 2019 at Amari Pattaya, Chonburi, Thailand. The conference brought together researchers, scientists and engineers from around the world to present their novel accomplishments, innovations and future directions in computer science and software engineering along with their applications. It offered a great occasion to share research experiences and to discuss potential new trends in computer science and software engineering.

With pleasure, we present this special issue of Journal of Internet Technology (JIT), devoted to JCSSE 2019. We invite some outstanding accepted papers in their extended versions and widely open for other submissions to this special issue. Each paper submitted to this special issue was rigorously reviewed by at least two reviewers in the corresponding research areas. Finally, we have five papers for this special issue. A summary of the papers is outlined below.

The first paper entitled “Clustering of Domestic Locations in Layers for the Purpose of Breakout Prevention of Diseases” is contributed by Varin Chouvatut, Ekkarat Boonchieng, and Waraporn Boonchieng. In this paper, the authors use the hierarchically spatial clustering approach with two layers of clustering to cluster geographical coordinates in terms of latitudes and longitudes and compare each cluster’s density in order to prevent mosquito-born diseases. A modified method with an additional strict constraint of k -means and k -nearest neighbors were proposed. Though additional constraint to k -means clustering in the first layer will cause some of the coordinates to un-cluster, all coordinates will be clustered again to a second layer. The experimental results show that the clustering results from the proposed method of clustering or grouping regions of households under a certain given constraint in clustering works very well and the obtained clusters can cover all target locations while the strictly required constraint can still meet.

The second paper entitled “An Improved Cellular Automata-Based Classifier with Soft Decision” is contributed by Pattapon Wanna and Sartra Wongthanavas. In this paper, the authors propose a new classifier, called Cellular Automata-Based Classifier with Soft Decision (CAS) to deal with

nonconforming patterns in a binary Cellular Automata-based Classifier. It improves the classification performance by augmenting a Soft-Decision step. This Soft-Decision step uses the pruning method to create a soft decision table, which efficiently serves for filtering useless data. By testing ten datasets consisting of conforming and nonconforming patterns, CAS provides the promising results.

The third paper entitled “Appearance Based Gaze Estimation Using Eye Region Landmarks and Math Approach” is contributed by Shichao Cheng, Bocheng Zhang, Jianjun Li, Zheng Tang, and Korhan Cengiz. In this paper, the authors propose a new and effective formula for drawing more accurate gaze directions which simplifies the task of 3D gaze direction estimation. In the context of individual gaze estimation independent of people, the proposed method is superior to existing model fitting and appearance-based methods.

The fourth paper entitled “Online Handwritten Verification Algorithms Based on DTW and SVM” is contributed by Kuo-Kun Tseng, Xiao-Xiao An, and Charles Chen. In this paper, the authors present a new algorithm for online hand-written signature verification problem based on DTW (Dynamic Time Warping) and SVM (Support Vector Machine). Unlike previous method of acquiring characteristic parameters of signature, the proposed algorithm computes the similarities between the test signature and reference signatures using DTW, gets the feature vector of test signature, and then classifies it into one of the two classes (genuine or forgery) by the SVM classifier. The experimental results show that the propose algorithm outperforms the existing methods.

The last paper entitled “Structure Fault-tolerance of the Augmented Cube” is contributed by Shuangxiang Kan, Jianxi Fan, Baolei Cheng, Xi Wang, and Jingya Zhou. Connectivity is one of the most important indicators used to evaluate a network’s fault tolerance performance. Structure and substructure connectivity are the two novel generalizations of the connectivity, which provide a new way to evaluate fault-tolerant ability of a network. In this paper, the structure connectivity and substructure connectivity of the augmented cube AQ_n for faulty structures being $K_{1,M}$ (a star with M leaves), P_L (a path with L vertices), or C_n (a cycle with N vertices) is investigated, where $1 \leq$

$M \leq 6$, $1 \leq L \leq 2n - 1$, and $3 \leq N \leq 2n - 1$.

Acknowledgement

As the Guest Editors of this special issue, we would like to express our sincere gratitude to all reviewers and authors for their expertise and efforts in making helpful comments and significant contributions, respectively, for this special issue. Without their hard work, the special issue would not be possible. Also, we want to thank Dr. Han-Chieh Chao, the Editor-in-Chief of JIT journal, for his encouragement and support to publish this special issue and to Ms. Sharon Chang, the Assistant Editor, for her professional help during the preparation of this special issue.

Guest Editors



Jou-Ming Chang is a Distinguished Professor of the Institute of Information and Decision Sciences (IDS) at National Taipei University of Business (NTUB). He received the BS degree in Applied Mathematics from Chinese Culture University, Taipei, Taiwan (1987), the MS degree in Information Management from National Chiao Tung University, Hsinchu, Taiwan (1992) and the Ph.D. degree in Computer Science and Information Engineering from National Central University, Zhongli, Taiwan (2001). Dr. Chang was a visiting scholar of Institute of Information Science at Academia Sinica, Taiwan (2012), International Sino College at SIAM University, Thailand (2017), and the Department of Mathematics at Beijing Jiaotong University (2018), respectively. He has served on the Director of IDS (2009-2012) and the Dean of the College of Management at NTUB (2014-2015). He also was a director of Association of Algorithm and Computation Theory, Taiwan (AACT) after 2013. Currently, he was a senior member of IICM, TAAC, AACT and IEICE. His major research interest includes graph theory, fault tolerance, and algorithm design for network optimization, combinatorial enumeration, and parallel and distributed computing. E-mail: spade@ntub.edu.tw



Kosin Chamnongthai (S'85-M'87-SM'91) received a B.Eng. degree in applied electronics from the University of Electro-Communications in 1985, an M.Eng. degree in electrical engineering from Nippon Institute of Technology in 1987, and a Ph.D. degree in electrical engineering from Keio University in 1991. He is currently a Professor with the Electronic and Telecommunication Engineering Department, Faculty of Engineering, King Mongkut's University of

Technology Thonburi, and vice president-conference of the APSIPA Association (2020-2021). He served as editor of ECTI e-magazine from 2011 to 2015, an Associate Editor of ECTI-EEC Transaction, from 2003 to 2010, and ECTI-CIT Transaction, from 2011 to 2016. He served as the Chairman of the IEEE COMSOC Thailand from 2004 to 2007 and president of the ECTI Association (2018-2019). His research interests include computer vision, image processing, robot vision, signal processing, and pattern recognition. He is a senior member of IEEE, and a member of IEICE, TESA, ECTI, AIAT, APSIPA, TRS, and EEAAT. E-mail: kosin.cha@kmutt.ac.th



Bibudhendu Pati is the Head in the Department of Computer Science at Rama Devi Women's University (only Govt. Women's University in the State of Odisha, India). He received his Bachelor in Engineering in Computer Science degree with Honours, Master in Engineering in Computer Science from National Institute of Technical Teachers' Training and Research (NITTTR), Chandigarh, Panjab, India, PhD degree from Indian Institute of Technology (IIT) Kharagpur, India. He has around 23 years of experience in teaching and research. His current research interests include Wireless Sensor Networks, Mobile Cloud Computing, Big Data, Internet of Things, and Advanced Network Technologies. He has been involved in many professional and editorial activities. He has got several papers published in reputed journals, conference proceedings, and books of International repute. He also served as Guest Editor of many reputed journals. He was the General Chair of ICACIE 2016, IEEE ANTS 2017, ICACIE 2018, ICACIE 2019, and ICACIE 2020 International Conferences. He has developed Advanced Network Technologies and Software Engineering Virtual Lab available online. He is the Life Member of Indian Society for Technical Education (ISTE), Life Member of Computer Society of India (CSI), and Senior Member of IEEE. E-mail: patibibudhendu@rdwu.ac.in