
Editorial

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Usha Rani Nelakuditi received the Doctoral degree (PhD), in a field of Medical Imaging from Jawaharlal Nehru Technological University, Anantapur, India, in 2013. She has published more than 30 research papers in various reputed journals and international conferences. She was the principal investigator for three government-funded research projects from various funding agencies like AICTE and DST, Government of India. She was being as a Head of the Electronics and Communications Engineering Department since 2013 in Vignan's Foundation for Science, Technology and Research University. Her areas of research include biomedical signal and image processing, VLSI, instrumentation and automation.

In this special issue of the *Electronic Government, An International Journal*, we are delighted to select nine research papers reporting on recent advances in electronics cloud and IoT. These papers presented in the ICAECS-2016, have been expanded in line with the reviewer recommendation and audience questions. It is hoped that this special issue will provide a useful reference for informing recently developed technologies in electronics, cloud and IoT. The contents of the selected nine papers are described briefly as follows:

The paper titled 'Performance analysis of a 5G non-orthogonal waveform filter bank multi carrier' by Yarrabothu et al. In this paper, it has been implemented, the poly-phase network filter bank multi carrier (PPN-FBMC), which reduces the high complexity and computations. A prototype filter for the PPN FBMC with high overlapping factors ($K = 6$ and 8) are implemented. It also simulates FBMC system using Mat lab Software,

to characterise and analyse the 5G candidate waveform FBMC and compare with OFDM, in terms of error vector magnitude (EVM), peak to average power ratio (PAR), and power spectral density (PSD) performance. The simulated results prove that FBMC outperforms the OFDM systems in all the above-mentioned aspects, even under noisy conditions.

The paper titled 'Bit error rate performance analysis of Cholesky decomposition based quasi ML receiver for large scale MIMO system' by Kasiselvanathan and Sathish Kumar. In this paper, a novel approach is proposed namely Cholesky Decomposition based Quasi Maximum likelihood (ML) detector followed by List Sequential (LISS) decoder (Quasi ML-LISS) receiver for LS-MIMO system. The refined empirical log-likelihood ratio (RELLR) generated by ML soft detector is decoded by using LISS decoder. The performance of the receiver is enhanced for turbo coded MIMO system by generating the RELLR at the detector output for higher order modulation. Simulation results show that bit error rate (BER) performance of the proposed receiver is closer to the ML performance and superior to the Multiple Stage (MS) receiver.

The paper titled 'Comparative analysis of applications of identity-based cryptosystem in IoT' by Ramesh et al. This paper gives a detailed feasibility study of the applicability of IBC in IoT. The transition from closed networks to enterprise IT networks to the public internet is accelerating at an alarming pace and justly raising alarms about security. As we become increasingly reliant on intelligent, interconnected devices in every aspect of our lives, how do we protect us from intrusions and interference that could compromise personal privacy? Security is paramount for the safe and reliable operation of IoT connected devices. In this aspect identity-based cryptography (IBC) plays a promising role in the internet of things (IoT) due to its benefits, such as facilitating public key management. This paper gives a detailed feasibility study of the applicability of IBC in IoT.

The paper titled 'Improving the accuracy of item recommendations in collaborative filtering using time-variant system' by Parasuraman and Elumalai. This paper focuses on improving the accuracy of item recommendations, based on the dynamic item-based collaborative filtering by utilising time-variant system which is implied on user ratings. The similarity between the items is found by using vector similarity and weight is calculated by Pearson correlation coefficient. Comparison of the results of traditional item-based collaborative filtering with dynamic item-based collaborative filtering is also discussed. Finally, it is observed that the users dynamic voting average improves the accuracy of recommendations comparing to the normal voting average on items.

The paper titled 'Middling role of social support between work family conflict and job satisfaction among professional women in Tamil Nadu' by Sakthivelrani and Ragles Devi. This study examines the extent of work-family conflict among respondents on the premise of occupation and marital status. This study additionally verifies the impact of work-family conflict and social support on job satisfaction. Questionnaire technique was accustomed to collect the data and every data were analysed using SPSS t-test, one-way analysis of variance, correlation and structural equation modelling (SEM) was utilised in this study. The result shows that the amount of work-family conflict is high among the married women comparing to the unmarried respondents. Job satisfaction among the employees is based on the organisational support providing to them.

The paper titled 'Performance benchmarking of tunnel transistors for energy efficient 4-bit adder architectures at low V_{DD} ' by Shaik and Sri Rama Krishna. This paper presents design analysis and benchmarking of TFET based three different 1-bit full

adders (8T-XOR Logic, 6T-XOR Logic and MUX Based) are used for designing 4-bit adders in two different topologies targeting a VDD below 500 mV. These topologies are 22T/18T 1-bit full adder based 4-bit carry propagate adder (22T/18TCPA) and multiplexer logic 1-bit full adder based 4-bit carry propagate adder (MCPA). The performance of TFET based 4-bit adder topologies has been benchmarked with 20 nm double gate Si FinFET technology. Tunnel FETs are desirable candidates for building energy efficient and reliable arithmetic blocks with supply voltage scaling.

The paper titled 'Behaviour state analysis through brain computer interface using wearable EEG devices: a review' by Ramakuri et al. In recent years, a vast research is concentrated towards the development of EEG based human-computer interface in order to enhance the quality of life for medically as well as non-medical applications. Industry and community of research have been attracted by wireless EEG reading devices and they are easily available in the market. Such technology can be incorporated into psychology, anesthesiology, and for real-time patients monitoring. A brain-computer interface (BCI) is a direct communication channel between the human brain and the digital computer. In this paper, we present a review on characteristics and specification of EEG based human-computer interfaces for real-time applications using wearable or wireless EEG devices.

The paper titled 'Impact of deflection history based priority on adaptive deflection router for mesh NoCs' by Isaac et al. Traditional designs employ input buffered routers which form the backbone of NoC. NoCs with buffer-less routers gain popularity due to its router design, low power and less chip area. The most innovative and inventive step in deflection router is to employ side buffers instead of input port buffers. Here propose deflection history as a priority metrics for flit selection and modified the primitive DeBAR design, and propose Priority Based Deflection Based Adaptive Router (PBDeBAR) that utilises a cost-effective priority scheme to choose a flit that has to be shifted to side buffer. The experimental outcome shows that PBDeBAR reduces latency, deflection rate, buffer occupancy and link usage with respect to the existing minimally buffered deflection routers.

The paper titled 'A survey on integrity verification and data auditing schemes for data verification in remote cloud servers' by Muthuram and Kousalya. In this paper the various integrity system models that are available for the remote storage server. Also, the author discussed the procedure for the various existing integrity verification schemes proposed. Finally, analysed those schemes in terms of security and performance. Cloud computing is an opportunistic model that provides a lot of services for business organisations so that concentrate more on their own business services instead of spending more cost on maintenance. Because of lack of access control and the data may tamper by malicious users, ensuring data storage correctness and integrity of cloud service provider is one of the major issues in the cloud computing.

The Guest Editor would like to thank all the authors for submitting their manuscripts in this special issue, and to acknowledge the reviewers for their contributions in reviewing the papers and providing constructive comments to the authors. Finally, the Guest Editor would like to specially thank Dr. June Wei (the Editor-in-Chief of EG) for her great help and support in organising and coordinating the publication of this special issue. Wishing the authors of this special issue a very happy reading.