
Editorial

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Biographical notes: Vijayakumar Varadarajan is currently a Professor and an Associate Dean for School of Computing Science and Engineering at VIT University, Chennai, India. He has more than 16 years of experience including industrial and institutional. He also served as a Team Lead in industries like Satyam, Mahindra Satyam and Tech Mahindra for several years. He has completed Diploma with First Class Honors. He has completed BE CSE and MBA HRD with First Class. He has also completed ME CSE with First Rank Award. He has completed his PhD from Anna University in 2012. He has published many articles in national and international level journals/conferences/books. He is a reviewer in IEEE Transactions, Inderscience and Springer Journals. He has initiated a number of international research collaborations with universities in Europe, Australia, Africa and North America including University of Missouri. He had also initiated joint research collaboration between VIT University and industries including FSS. He is also the Guest Editor for few journals in Inderscience, Springer and IGI Global. He also organised several international conferences and special sessions in USA, Vietnam, Africa and India including IEEE, ISBCC etc. His research interests include computational areas covering grid computing, cloud computing, computer networks and big data. He received his university-level Best Faculty Award for 2015–2016. He is also a member of several national and international professional bodies including ISTE, IAENG, CSTA, etc.

Dr. P. Nithyanandam is a Professor in School of Computing Science and Engineering, VIT University, Chennai Campus. He is an Academician and has an experience of 15 years. He received BE in Computer Science and Engineering from Madurai Kamaraj University in 2000, MTech in Computer Science and Engineering from BITS pilani in 2003 and PhD in Computer Science and Engineering, from Anna University, Chennai in 2013. He has published many national and International publications to his credit and conducted various national and international conferences. He is also a reviewer

for various leading journals such as IEEE, Elsevier, Inderscience, etc. He is the Head of Research Group 'Digital Image and Video processing' of VIT University Chennai campus. He has completed two funded projects for the Tamil Virtual University, funded by Tamilnadu Government. His research area include data security, compression, cloud computing and image processing. He is guiding six research scholars for PhD and MS program.

Neelanarayanan Venkataraman received his Master of Science in Computer Science from Madurai Kamaraj University, India in 1995 and PhD from IT University of Copenhagen, Denmark in 2012. Currently, he is an Associate Professor at VIT University, Chennai, India. Before joining VIT University he has worked as a Scientist at Centre for Advanced Computing (CDAC), India and as a Lecturer in Madurai Kamaraj University, India and its affiliated institutions. His areas of research include distributed computing such as grid and cloud computing, context-aware computing, network management and security, XML-based security technologies and e-communities. He has initiated a number of international research collaborations with universities in Europe, Australia and South Korea as a Research Group Coordinator and Chief Investigator at VIT University. He was instrumental for initiating joint research collaboration between VIT University and industries such as CDAC and D-Link. He has published more than 30 papers in various peer-reviewed international conferences and journals. He has organised various national workshops, international conference and symposium. Currently, he is heading the Cloud Computing Research Group at VIT University, Chennai campus and six students are pursuing their PhD under his guidance. He received the research award in VIT University for the year 2015 for his achievements, exemplary commitment, dedication and motivation towards research publication during 2015–16.

Guillaume Blin is as a Professor in Université de Bordeaux, France. He has published many national and international publications and conducted various national and international conferences. He is also a reviewer for various leading journals. He is the Head of the Research Goup 'MABioVis' of LaBRI, Université de Bordeaux, France. He is also the Chair of the Bachelor degree in Computer Science of Université de Bordeaux. His research area includes algorithmic applied to different fields from succinct data structures to radiotherapy.

Mobile Technologies is a big boon to the humankind in this modern world. According to World Bank survey, no other technology has been in the hands of so many people within such a short period of time. The stack holder covered under this communication model includes the people from the lower end of the society to the other. Mobile technology facilitates in accomplishing everyone to work efficiently and effectively with ease. The application supported by smartphones varies from simple to complex. As a paradigm shift, it has replaced the size of computing to a micro level and ubiquitous. It bridges the gap of human being's active-passive communication located in various geographical boundaries across the globe with no time. Social media, m-commerce, m-governance, healthcare, entertainment, general-purpose computing, office applications, multimedia, etc., can be carried in modern smartphones on par with existing high-end computing facilities available today. Nowadays, a smartphone has become a part and parcel of life.

A steep decline in hardware cost, increase in storage capacity and high bandwidth to support data exchange make the mobile technology more and more affordable to lower sector people of the society. Mobiles also offer greater independence for women by opening new channels of information and affording greater personal privacy. They can also offer women greater security and

safety not only as emergency tools but also to report and monitor violence against women. Mobile applications are also being used to battle poverty by expanding service delivery possibilities in healthcare, agriculture, employment and education. Mobile technology promotes and support digital financial transactions which enable to eradicate black money and give way to bring economic progress in a nation.

The evolution of mobile technologies ranging from 1G to 4G LTE supporting various versatile voluminous applications depicts that computation and communication in future going to be virtual reality. It bridges the gap between man-machine interactions and thus automation of any activity will be done with ease and efficiently. Existing IoT technology aligned along with mobile technology is an existing and growing advance cutting edge technology in current research. IoT will certainly hold a place in modern and upcoming research arena and enable us to attain more and more atomisation in this digital world. The fusion of mobile and IoT technology will support more interdisciplinary research work. Recently, IBM is venturing in to make cognitive mobile and IoT computing a reality today.

For the special issue of IJIM on Innovative Mobile Technology, I am thankful to all the regional editors and the reviewers who supported the journal with their valuable recommendations.

This special issue on Innovative Mobile Technology of IJIM consists of eight papers. The first paper, entitled: *Dynamic salt generation for mobile data security using elliptic curves* against precomputation attacks 'proposes a pattern lock mechanism that most of the people set to their Android smartphones. As the built-in pattern lock system adds an extra layer of protection and is one of the innovative unlock methods supported by Android, a fair quantity of study has been done about its (in) security. Pattern locks are not difficult to crack and are vulnerable to precomputation attacks such as brute forcing, dictionaries and rainbow tables.

I am very grateful to Alexandra Starkie, Journal Manager, for all his hard work to promote this journal. I am greatly indebted to the reputed Inderscience Publishers for their belief in our ability and who provide us the opportunity to edit an international journal. On behalf of all the editorial board members, I am thankful to all researchers in the field of image mining who accepted our invitation to submit their scholarly work. I would like to thank the readers and the image mining community for their interest in IJIM

The second paper: 'Analysis on spectrum sensing schemes for cognitive radio networks', proposes soften hard decision fusion mechanism is used to solve the sensing failure as it provides fine sensing and increases the detection probability with trade-off between probability of detection and complexity. Binary hypothesis testing rule is applied to verify the sensing concept. Censoring policy can be chosen in the case of good signal-to-noise ratio which provides energy-efficient sensing scheme. Results conclude that soften hard decision performs better than the other types of sensing schemes.

The third paper: 'Efficient routing for low rate wireless network - a novel approach', proposes a beacon-enabled least-time and energy-efficient routing protocol with single-level data aggregation using an IEEE 802.15.4. Considering the low complexness and low power consumption, it is appropriate for Low-Rate Wireless Personal Area Networks as WSNs. On comparison of the proposed protocol with the popular ad hoc and other WSN routing protocols, the results show that the proposed protocol outperforms the routing protocols in the literature in terms of latency, throughput and average energy consumption.

The fourth paper: 'Active resource allocation design for QoS improvement in wireless broadband interworking networks' proposes that an active resource allocation (ARA) scheme is developed to organise the available resource among the interworking ultramobile broadband (UMB) - worldwide interoperability for microwave access (WiMAX) - wireless local area network (WLAN). The resource provisioning scheme deals with complete partitioning of the available radio

channels based on prioritising the type of applications, such as real-time and non-real-time services. The proposed ARA Scheme is validated through OPNET results obtained related to the defined set of applications such as VoIP, FTP, HTTP and email.

The fifth paper: 'Spectrum sensing for 4G LTE OFDM signals in heterogeneous network using neural network' has presented artificial neural network-based classification of OFDM signal of Third-Generation Partnership Project Long-Term Evolution (3GPP LTE) signals that is used on 4G wireless networks. We used reference signal-induced cyclostationarity and Cyclic Prefix property as feature for classification. The 3GPP LTE OFDM signal classification is done in a heterogeneous network environment in which other OFDM signal from IEEE WiMAX network and other single-carrier digital modulation signal presence is considered. Comparison of classification performance for multilayer perceptron and radial basis function neural network is presented. The effect of two training algorithm, Levenberg-Marquardt (LM) and Back Propagation with momentum, on the convergence rate for training the neural network is presented.

The sixth paper: 'An efficient network selection algorithms in next-generation heterogeneous wireless networks' surveys the different network selection techniques available in the literature and explains a method for network selection which takes into consideration of multiple decision-making criteria for selecting the optimal network.

The seventh paper: 'Multilevel watermarking technique for securing multibiometric templates using DTCWT and SVD' deals multimodal biometrics is more advantageous over unimodal biometrics as it is resilience to spoofing and has low false acceptance rate (FAR). Existing multibiometric technique uses two biometric traits, namely fingerprint and face. This technique is invasive in nature and is prone to spoofing attack. The proposed multibiometric technique implements finger vein as an additional biometric trait along with fingerprint and iris. Finger vein is non-invasive in nature and increases security.

The Eighth paper: 'Performance of Landweber iteration algorithm in tomographic image reconstruction', in this paper Landweber-based iteration image reconstruction is simulated and its performance is compared with different algorithms. Then, the quality of the reconstructed image is expressed in terms of mean absolute error and correlation coefficient as compared to the original image. The entire simulations are performed in MATLAB tool.

Our sincere thanks to our most respected Chancellor Dr. G. Viswanathan, Vice President Mr. Sankar Viswanathan, Assistant Vice President Ms. Kadhambari S. Viswanathan, Vice Chancellor Dr. Anand A. Samuel, Pro Vice Chancellor Dr P. Gunasekaran and School Dean Dr. Vaidehi Vijayakumar of VIT University Chennai for their continuous guidance and moral support for our team in completing this task successfully.

We would like to thank the entire team (Faculties, Staff and Research Scholars) of School of Computing Science and Engineering for their hearty cooperation.

VIT - The first and the only University in India to get 4-STAR rating from QS, the international ranking agency, Winner of the prestigious national award from FICCI, 'University of the year' for 2016, and Ranked No.1 Private Engineering Institution by MHRD, Govt of India (NIRF-2016 ranking).

Our special thanks go to the Editor-in-Chief Dr. Wahiba Ben Abdessalem Karâa and his entire Inderscience team for their continuous support. Sincere thanks to the Inderscience Publisher for such great opportunity.