
Editorial

Muhammad Khurram Khan

Centre of Excellence in Information Assurance,
King Saud University, Saudi Arabia
Email: mkhurram@ksu.edu.sa

Neeraj Kumar

Department of Computer Science and Engineering,
Thapar University, Patiala (Punjab), India
Email: neeraj.kumar@thapar.edu
Email: nehra04@yahoo.co.in

Shi-Jinn Horng

National Taiwan University of Science & Technology,
Taipei, Taiwan
Email: horngsj@yahoo.com.tw

Biographical notes: Muhammad Khurram Khan is currently working at the Center of Excellence in Information Assurance (CoEIA), King Saud University, Saudi Arabia. He is the Editor-in-Chief of a well-esteemed International journal 'Telecommunication Systems' published by Springer-Verlag since 1993 with an impact factor of 1.163 (JCR 2013). Furthermore, he is the full-time Editor/Associate Editor of several international journals, including *Journal of Network & Computer Applications* (Elsevier), *IEEE Access Journal*, *Security & Communication Networks* (Wiley), *Journal of Medical Systems* (Springer), *PLOS ONE* (USA), *Computers & Electrical Engineering* (Elsevier), *Electronic Commerce Research* (Springer), and *Scientific World Journal* (Hindawi), etc. He has published more than 200 research papers in the journals and conferences of international repute. In addition, he is an inventor of 10 US/PCT patents. His research areas of interest are Cybersecurity, digital authentication, biometrics, multimedia security, and technological innovation management. He is a senior member of the IEEE (USA) and a member of the IEEE Technical Committee on Security & Privacy.

Neeraj Kumar received PhD in CSE from Shri Mata Vaishno Devi University, Katra (India) and PDF from Coventry University, Coventry, UK. He is working as Associate Professor in the Department of Computer Science and Engineering, Thapar University, Patiala, Punjab (India). He has more than 100 research publications to his credit in well known peer-reviewed journals and conferences. He has edited the special issue of more than six journals from the reputed publishers. His research is focused on mobile computing, parallel/distributed computing, and cloud computing. He is reviewer of many international journals from leading publishers and TPC of many international conferences. His research is supported by the research grant from TCS and UGC. He has research collaborations with many leading organisations across the globe and has visited many organisations for teaching and research purposes. He is a member of ACM and senior member of ACEEE and IACSIT.

Shi-Jinn Horng received the BS Degree in Electronics Engineering from National Taiwan Institute of Technology, Taipei, the MS Degree in Information Engineering from National Central University, Taiwan, and the PhD Degree in Computer Science from National Tsing Hua University, Taiwan, in 1980, 1984, and 1989, respectively. He was a Professor and Dean of the College of Electrical Engineering and Computer Science, National United University, Miaoli, Taiwan. Currently, he is a Professor at the Department of Computer Science and Information Engineering, National Taiwan University of Science and Technology. He has published more than 170 research papers and received many awards; especially, the Distinguished Research Award between 2004 and 2006 from the National Science Council in Taiwan; Outstanding I.T. Elite Award, in 2005; Outstanding EE. Prof. Award, the Chinese Institute of Electrical Engineering; Outstanding Research and Invention Award between 2006 and 2008 from National Taiwan University of Science and Technology.

From the past few decades, there has been an exponential growth in the area of pervasive and ubiquitous computing. The needs of the users are changing day by day as they are demanding more services on their handheld devices. As the applications access data from variety of locations, so security remains one of the major concerns in this domain. Hence, there is a requirement of efficient mechanisms which can address various security related issues in this environment. This special issue invites various proposals keeping an eye on the above issues and received many high quality papers which are peer reviewed by independent reviewers. Some of the vital contributions in this special issue are described as follows:

In first paper, Mall et al. have provided a detailed survey on key management schemes in wireless sensor networks. Authors have described a detailed study of the various key management schemes with respect to various metrics. They have highlighted the advantages and disadvantages of various key management schemes in sensor networks.

In the second paper, Su and Chen described content-based image retrieval for peer-to-peer networks. The proposed scheme provides a detailed multi-instance image query with multi-features types to reduce network traffic to maintain a high accuracy. The experimental results demonstrate the effectiveness of the proposed scheme as it has higher accuracy and less delay in accessing the content from the network.

In the third paper, Muhaya first analyse the stolen smart card attack to the existing Yang et al.'s scheme, and then propose an enhanced mutual authentication scheme for trusted computing. The proposed scheme is resilient with respect to various types of attacks on the networks.

In fourth paper, Kim described a qualitative and knowledge based approach for security architecture. The cost of an architectural tactic is estimated by using the use case points method, and a level of tactic contribution for

non-functional requirements (NFRs) is predicted by the Analytic Hierarchy Process (AHP) and sensitivity analysis. The proposed approach suggested the best possible fit which is likely to satisfy NFRs of an application. The authors have applied the proposed approach by picking a case study of online trading system.

In fifth paper, Chen et al. develop an anti-forensic steganography system using the proposed multi-bit MERs with flexible bit location embedding method to overcome the problem of forensics and to achieve high performance includes both large embedding capacity and high image quality. They have developed a threshold based mechanism to evaluate the anti-forensics degree of the proposed method and provide a detailed demonstrated using the visual attack and the statistical attack of Chi-square analysis.

In the sixth paper, He et al. proposed a new handover scheme using bilinear pairing for mobile wireless network. The proposed scheme is resilient with respect to various attacks in the network and is found effective in various network scenarios under different attack models.

In the seventh paper, Mishra et al. proposed a new biometric-based remote authentication scheme for connected healthcare. Authors have evaluated the performance of the proposed scheme with respect to various types of attacks where its performance was found better than the other existing scheme. Authors have evaluated the scheme by selecting various types of parameters.

We would like to thank all the anonymous reviewers for their valuable comments and suggestions to bring this special issue in the current form. Also, we would like to thank the Editor and chief Professor Han-Chieh Chao and Professor Yuh-Shyan Chen to give us this opportunity to arrange this special issue. We would also like to thank all the contributors who has given their valuable findings in this special issue.