

Special Issue: Recent Advances in Information Technology and Security
Selected Best Papers of International Symposium on Information Science and
Engineering 2008(ISISE 2008) and International Symposium on Computer Science
and Computational Technology 2008(ISCST 2008)
Track on Communications

Editorial

This special issue comprises six selected papers from the International Symposium on Information Science and Engineering 2008 (ISISE 2008) and International Symposium on Computer Sciences and Computational Technology 2008 (ISCST 2008), held in Shanghai, China, 20-22 December 2008. A total of more than 2000 contributions were submitted to the two Conferences, of which 600 were selected for presentation after a rigorous review process. From these 600 research papers, the guest editors selected six as the best papers on the communications track of the Conferences. The authors of these selected papers produced extended versions of their conference papers, which were further developed through two rounds of reviewing.

“TTEM: An Effective Trust-Based Topology Evolution Mechanism for P2P Networks”, by Jianli Hu, Quanyuan Wu, and Bin Zhou, presents a feedback credibility based global trust model, and based on the trust model, proposes an adaptive topology evolution mechanism for unstructured P2P networks. Through this mechanism, trusted peers can migrate to the centric position, while untrusted peers to the edge of the topology, guaranteeing fairness during topology evolution. The mechanism can suppress the malicious behaviors of peers effectively, and also has the incentive effect on all peers.

In “SimANet – A Large Scalable, Distributed Simulation Framework for Ambient Networks”, Matthias Vodel, Matthias Sauppe, Mirko Caspar, and Wolfram Hardt present a new simulation platform for complex, radio standard spanning mobile Ad Hoc networks. The presented SimANet - Simulation Platform for Ambient Networks - allows the coexistence of multiple radio modules with different communication technologies and protocol stacks within one node, which can be used concurrently.

“Cryptanalysis of Some RFID Authentication Protocols”, by Tianjie Cao, Peng Shen, and Elisa Bertino, identifies two effective attacks, namely impersonation attack and de-synchronization attack, against the LCSS protocol and the Song-Mitchell RFID authentication protocol. The authors also identify an impersonation attack against another newly proposed RFID authentication scheme. It is recommended that these attacks should be considered in the designing the new RFID authentication protocol.

In “How to Construct Forward Secure Single-Server, Multi-Server and Threshold-Server Assisted Signature Schemes Using Bellare-Miner Scheme”, Jia Yu, Fanyu Kong, Rong Hao, Dexiang Zhang, and Guowen Li address the problem of how to construct forward secure single-server, multi-server and threshold-server assisted signature schemes using Bellare-Miner Scheme, and propose three corresponding signature schemes. It has been proved in the paper that, these three schemes maintain the forward secure property.

“Publicly Verifiable Secret Sharing Member-join Protocol For Threshold Signatures”, by Jia Yu, Fanyu Kong, Rong Hao, Xuliang Li, and Guowen Li, proposes a publicly verifiable member-join protocol for threshold signatures, in which, a new member can join a PVSS scheme to share the secret only with the help of old shareholders. Moreover, everyone besides the new member can verify the validity of the new member’s share, while only the new member knows his share. The proposed protocol can tolerate a mobile adversary and adapts to many electronic applications.

In the last paper “Secure and Distributed P2P Reputation Management”, Jianli Hu, Quanyuan Wu, and Bin Zhou proposes a reputation based secure and distributed P2P global trust management model (DSRM), and presents its corresponding distributed storage mechanism and security protection protocol. Theoretical analysis and simulation experiments show that, DSRM has advantages in combating various malicious behaviors such as ordinary malicious behaviors and collusions, and suppressing the sybil attackers and trust information tamper peers in transmission over the current global trust management models, and demonstrates more robustness and effectiveness.

In closing, we would like to take this opportunity to thank the authors for the efforts they put in the preparation of the manuscripts and in keeping the deadlines set by editorial requirements. We wish to express our deepest thanks to the program committee members for their help in selecting papers for this issue and especially the referees of the extended versions of the selected papers for their thorough reviews under a tight time schedule. We also acknowledge the exceptional effort by the Editorial Board of the Journal of Communications throughout this process. We hope that you will enjoy reading this special issue as much as we did putting it together.

Guest Editors:

Wen Chen, Shanghai Jiaotong University, China. Email: wenchen@sjtu.edu.cn

Fei Yu, Peoples’ Friendship University of Russia, Russia. Email: hunanyufei@126.com

Chin-Chen Chang, National Chung Hsing University, Taiwan. Email: ccc@cs.ccu.edu.tw

Jiexian Zeng, Nanchang HangKong University, China. Email: Zengjx58@163.com
Guangxue Yue, Jiaxing University, China. Email: guangxueyue@yahoo.com.cn



Wen Chen was born in 1967 in Anhui, China. He received his PhD from the University of Electro-Communications, Tokyo, Japan in 1999. He was a researcher with Japan Society for the Promotion of Sciences from 1999 through 2001. Then he joined University of Alberta, Canada, starting as a post-doctoral fellow in Information Research Lab and continuing as a research associate in Department of Electrical and Computer Engineering. Since 2006, he has been a full professor in Department of Electronic Engineering, Shanghai Jiaotong University, China, where he is also the director of Institute for Signal Processing and Systems. Dr. Chen was awarded the Ariyama Memorial Research Prize in 1997, the PIMS Post-Doctoral Fellowship in 2001. He received the honors of “New Century Excellent Young Researcher in China” in 2006 and “The Pujiang Excellent Investigator in Shanghai” in 2007. He is elected the vice general secretary of Shanghai Institute of Electronics in 2008. He is in the editorial board of the “International

Journal of Wireless Communications and Networking”, and serves IEEE Communications Society as a Technical Committee member of Communication Theory. He is the TPC chair for IEEE-ICCS2008 and a special session chair for IEEE-SIPS2007. He has published more than 30 papers in IEEE journals and conferences. His interests cover cooperative communications and networks.



Fei Yu was born in Ningxiang, China, on February 06, 1973. Before Studying in Peoples’ Friendship University of Russia, Russia, He joined and worked in Hunan University, Zhejiang University, Hunan Agricultural University, China. He has wide research interests, mainly information technology. In these areas he has published above 50 papers in journals or conference proceedings and a book has published by Science Press, China (Fei Yu, Miaoliang Zhu, Cheng Xu, et al. Computer Network Security, 2003). Above 30 papers are indexed by SCI, EI. He has won various awards in the past. He served as many workshop chair, advisory committee or program committee member of various international ACM/IEEE conferences, and chaired a number of international conferences such as IITA’07, ISIP’08, ISECS’08 ISIP’09, ISECS’09 and ISISE’08. He have taken as a guest researcher in State Key Laboratory of Information Security, Graduate School of Chinese Academy of Sciences, Guangdong Province Key Lab of Electronic Commerce Market Application

Technology, Jiangsu Provincial Key Lab of Image Processing and Jiangsu Provincial Key Laboratory of Computer Information Processing Technology.



Chin-Chen Chang was born in Taichung, Taiwan on Nov. 12th, 1954. He obtained his Ph.D. degree in computer engineering from National Chiao Tung University. He's first degree is Bachelor of Science in Applied Mathematics and master degree is Master of Science in computer and decision sciences. Both were awarded in National Tsing Hua University. Dr. Chang served in National Chung Cheng University from 1989 to 2005. His current title is Chair Professor in Department of Information Engineering and Computer Science, Feng Chia University, from Feb. 2005.

Prior to joining Feng Chia University, Professor Chang was an associate professor in Chiao Tung University, professor in National Chung Hsing University, chair professor in National Chung Cheng University. He had also been Visiting Researcher and Visiting Scientist to Tokyo University and Kyoto University, Japan. During his service in Chung Cheng, Professor Chang served as Chairman of the Institute of Computer Science and Information Engineering, Dean of College of Engineering, Provost and then Acting President of Chung Cheng University and Director of Advisory Office in Ministry of Education, Taiwan.

Professor Chang has won many research awards and honorary positions by and in prestigious organizations both nationally and internationally. He is currently a Fellow of IEEE and a Fellow of IEE, UK.



Guangxue Yue was born in 1963, Guizhou, China. He obtained his master in Hunan University. Professor, the College of Mathematics & Information Engineering, Jiaxing University, China. His main research interests include Distributed Computing & Network, Network Security, and Hybrid & Embedded Systems. In these areas he has published above 30 papers in leading journals or conference proceedings, above 20 papers are indexed by SCIE, EI. He served as many workshop chairs, advisory committee or program committee member of various international IEEE conferences, and chaired a number of international conferences such as ISECS’08, ISIP’09, ISECS’09 and ISISE’08. He have taken as a guest researcher in Jiangxi University of Science and Technology, Jiangsu Polytechnic University, State Key Laboratory for Novel Software Technology at Nanjing University, Graduate School of Chinese Academy of Sciences, Guangdong Province Key Lab of Electronic Commerce Market Application Technology.