Editorial

The Challenge of Multimedia Social Networks and Security

The past decade has witnessed that Multimedia Social Networks (MSNs) and social media are shifting from the emergence to hot topics. As a provider and enabler of digital multimedia content, social services and open platform, MSNs are familiar to all of us nowadays, such as YouTube, Instagram, Songtaste, as well as Chinese Youku and CyVOD we sponsored. These above mentioned MSNs have all the same pros and cons. One of biggest advantages is to make people-to-people exchange and sharing more efficient than ever, but the significant disadvantage is security issue that is terribly burning and even possibly damages the social media applications. So, the academia, industry and government in the field of digital content and social multimedia have paid more and more attentions on the intractable issue, which includes arbitrary dissemination, unauthorized usage and massive piracy. Security, trust and risk in multimedia social networks ecosystem become a holistic topic that deserves to be in-depth explored and well-rounded solved.

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The motivation of the thematic issue is to bring together academia researchers, industrial engineers and governmental administrators who are intended to adopt the state-of-the-art technologies and methods for improving multimedia social network security in essence.

The first paper mainly discussed a technological security issue on private set intersection protocol for mobile social networks, and there is a crucial service to support large-scale social connections within physical proximity according to personal preferences. The paper presented that in existing systems available for such services, users generally publish their profiles completely for the convenience of searching. However, the users do not want to make their sensitive information public due to a privacy consideration. Thus, a privacy-preserving personal profile matching scheme was proposed. The authors presented a protocol based on homomorphic encryption and threshold scheme for semi-honest environment. The protocol is formally proofed to be secure in the standard model.

Then, as one of key technologies for multimedia social networks services management, a study on the service transmission and recovery strategy based on cluster was followed in the second paper. Considering mobile social network service environment, users can establish a group relying on some relationships and share services within a group or among different groups. When the mobile devices provide services for a user, some service transmission paths will fail because of device movement or failure, and the user cannot receive required services. Establishment mechanism of recovery point is adopted in the proposed strategy. The recovery point is able to save and maintain the service data received from the service provider. Simulation experiment results show that this strategy can save the transmission delay and improve the probability of successful transmission.

At last but not least, cloud computing environment now becomes an essential infrastructure of social media and social network applications. How to guarantee the security and trustworthiness of access to cloud media and could servers is vital for such stakeholders as cloud administrators, media owners and cloud users. Introducing the remote attestation mechanism into security protocol can avoid terminal security vulnerability when user accessed. In the final paper of the thematic issue, by constructing of trusted access authentication framework using remote attestation mechanism, and a security protocol for trusted access to cloud environment is proposed. The proposed protocol with greater security and efficiency compared to other corrective schemes through attack resisting analysis and computational cost analysis, and proved secure using strand space model.

Z. Zhang, born in 1975 October, at City of Xinxiang, Henan, P. R. of China, received his Master, Ph.D. degrees in Computer Science from Dalian University of Technology and Xidian University, respectively. He has been ever post-doctoral fellowship at Xi'an Jiaotong University, China. Nowadays, he is a full-time Henan Province Distinguished Professor and Dean with Department of Computer Science, College of Information Engineering, Henan University of Science & Technology. He is also a visiting professor of Computer Science Department, Iowa State University. He is ACM Senior Member, IEEE Senior Member, IEEE Systems, Man, Cybermetics Society Technical Committee on Soft Computing, World Federation on Soft Com-

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Prof. Zhang and research interests include digital rights management and multimedia social networks, trusted computing and access control, as well as security risk management and soft computing. Recent years, he has published over 80 scientific papers and four books on the above research fields, and held 8 authorized patents. Besides, he is Editorial Board Member of Multimedia Tools and Applications and Neural Network World, Associate Editor of Social Network Analysis and Mining, Topic (DRM) Editor-in-Chief of International Journal of Digital Content Technology and Its Applications, as well as Guest Editor of The Computer Journal, EURASIP Journal of Information Security, Journal of Multimedia, etc. And also, he is Chair/Co-Chair and TPC Member for numerous international workshops/sessions on Digital Rights Management and contents security.

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