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## Editorial

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**Biographical notes:** Frank Shih received his BS from National Cheng-Kung University, Taiwan, M.S. from State University of New York, Stony Brook, and PhD from Purdue University. He is presently a Professor at New Jersey Institute of Technology, USA. He is an internationally well-known Scholar and served as a Steering Member, Committee Member, and Session Chair for numerous professional conferences and workshops. He has authored three books: *Digital Watermarking and Steganography*, *Image Processing and Mathematical Morphology*, and *Image Processing and Pattern Recognition*, and has published over 200 papers. His research interests include image processing, computer vision, watermarking, digital forensics, and pattern recognition.

Shiguo Lian received his PhD from Nanjing University of Science and Technology, China. He was a Research Assistant in City University of Hong Kong in 2004. Since July 2005, he has been a Research Scientist with France Telecom R&D (Orange Labs) Beijing. He is the author of more than 90 refereed international journal and conference papers covering topics of secure multimedia communication, intelligent multimedia services, and ubiquitous computing and communication. He has authored/edited six books, contributed 15 book chapters and held 16 patents. He received the Nomination Prize of 'Innovation Prize in France Telecom' and 'Top 100 Doctorate Dissertation in Jiangsu Province' in 2006.

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## 1 About the journal

Nowadays, ubiquitous multimedia is enriching our lives, which benefit from the rapid development of intelligent multimedia technology. At the same time, intelligent multimedia technology, such as multimedia data mining and content understanding, becomes more and more effective for solving security related problems, e.g., traffic surveillance, digital crime identification, terrors detection, etc. The focused field, multimedia intelligence and security, is an interdisciplinary field covering intelligent

computing, multimedia processing, multimedia communication and information security. Currently, there are many researchers or engineers working in this challenging field, many academic conferences held every year, and many applications and products developed timely. However, no journals focus on this interdisciplinary field. Thus, we plan to launch the new journal to provide a forum for the researchers and engineers working in this field, and also disseminate valuable information to readers.

It is an international refereed research journal integrating the disciplines of intelligent computing, information security, biometrics, multimedia processing, communication and applications. The journal provides a forum to information technology educators, researchers, and practitioners to advance the practice and understanding of multimedia intelligence and security. The journal features a major emphasis on how to realise intelligent multimedia computing and how to adopt multimedia intelligence in security related applications. It publishes full-length research papers, state-of-the-art reviews, insightful research and practice notes, case studies and book reviews from all areas of multimedia intelligence and security that are selected after a rigorous blind review by experts in the field.

The journal expects the papers covering but not limited to the following topics: multimedia processing, multimedia semantic analysis, multimedia content understanding, multimedia data mining, multimedia communication, internet/mobile multimedia sharing, intelligent multimedia interface, intelligent multimedia services, biological/medical image processing, intelligent E-health based on multimedia analysis, multimedia database management, innovative multimedia systems or devices, multimedia content security, multimedia copy detection, multimedia copyright protection, digital rights management, object detection and tracking, biometric recognition, intelligent surveillance, event detection and tracking, person identification from multimedia content, crime detection based on multimedia analysis, homeland security based on multimedia analysis, sensitive content retrieval/filtering over internet, security and privacy in multimedia social networks, and so on.

Compared with existing journals, this journal considers the intelligent computing, intelligent multimedia analysis, and their interdisciplinary relation with security. The editorial board of this journal is composed of world-wide well-known experts. Most of them are the organisers of international conferences or members of the technical committees, closely related to the field of multimedia intelligence and security.

## **2 The papers in this inaugural issue**

This issue is composed of five papers contributed by our editorial board members. All these papers have been blind-reviewed by at least two reviewers. They cover the interesting topics, e.g., multimode information fusion, media retrieval, multimedia content adaptation, human action recognition, and service security of internet telephone.

The first paper, 'Multimodal information fusion for selected multimedia applications' by L. Guan et al., investigates the multimodal information fusion techniques and some related applications. Multimodal information fusion collects data from diverse sources or sensors to improve the recognition or classification accuracy. This paper presents several multimedia systems based on a multimodal approach, and provides a comprehensive

review of the start-of-the-art in related areas, including emotion recognition, image annotation and retrieval, and biometrics. Additionally, a facial fiducial point detection and a gesture recognition system are presented, which can be incorporated into a multimodal framework. Furthermore, some issues and challenges in the research and development of multimodal systems are discussed, and the application of multimodal information fusion for intelligent robotic system is presented. This paper provides valuable information to researchers working in multimodal information fusion.

In the second paper, 'Cross-media retrieval: state-of-the-art and open issues' by J. Liu et al., cross-media retrieval, being able to provide retrieval results with different media to the query, is investigated, which is an emerging research topic in text/content based retrieval field. This technique is driven by the wide availability of large multimedia resources on the web, innovative approaches to semantically understanding various multimedia objects, and novel machine learning techniques for the interactive mappings among heterogeneous feature spaces. This paper reviews the latest cross-media retrieval techniques, and discusses open issues and future opportunities in the research. The work is latest and will benefit the researchers and engineers working in this field.

The third paper, 'Intelligent multimedia engines for multimedia content adaptation' by D.N. Kanellopoulos, focuses on the intelligent adaptation engine (AE) in universal multimedia access (UMA), which enables the multimedia resources to be transformed sufficiently such that they fit the consumer's preferences and usage environment before they are sent to client. This paper presents research efforts on adaptation decision-taking engines (ADTEs) and considers how intelligent ADTEs can be designed and developed. The ADTE is the key component of an AE based on the MPEG-21 digital item adaptation (DIA) framework. This work will be interesting for researchers working either in intelligent multimedia applications or multimedia standardisation.

In the fourth paper, 'Markerless body part tracking for action recognition' by S. Calderara et al., a method for recognising human actions is proposed, which tracks body parts without using artificial markers. In this method, a sophisticated appearance-based tracking able to cope with occlusions is exploited to extract a probability map for each moving object. And, a segmentation technique based on mixture of Gaussians (MoG) is then employed to extract and track significant points on this map, corresponding to significant regions on the human silhouette. The evolution of the mixture in time is analysed by transforming it in a sequence of symbols (corresponding to a MoG). Experimental results on publicly available datasets and comparison with existing methods are provided to show the presented method's prior performances. The human action recognition is now a hot topic in homeland security, and is now attracting more and more researchers.

The fifth paper, 'Source-oriented pattern analysis of flooding-type attacks in SIP-based internet telephony services', by J. Heo et al., discusses the flooding-type attacks on session initiation protocol (SIP)-based internet telephony. A source-oriented pattern analysis system is proposed to determine the characteristics of flooding-type attacks and discover the attack pattern. The characteristics and patterns include the outlier traffic, message composition, occurrence type, and transfer type of flooding attacks. Some experimental results are given to show the proposed system's effectiveness. This work gives a typical example for information security based on multimedia intelligence.

### **Acknowledgements**

The Editors-in-Chief wish to thank Dr. M.A. Dorgham for providing the opportunity to launch this journal, and thanks Mr. Jim Corlett for helping to make the journal online. We would also like to thank the authors (editorial board members) for submitting their works as well as the referees who have critically evaluated the papers within the short stipulated time. Finally, we hope the reader will share our joy and find this inaugural issue very useful.