Title: Applications of Multimedia Security and Forensic Techniques for Secure Communication, Protection and Detection of Data Content

Abstract:

The tremendous growth of advanced telecommunication and Internet technologies in the past two decades has led to the proliferation of multimedia content for digital transmission and storage. The talk will give an overview of the convergence of technologies in the information forensics and security domain such as data hiding techniques and their applications to digital images. For example, image steganography for secure communication of secret messages via an open channel, and digital watermarking for protection and authentication of content integrity. Finally, the talk will also introduce forensic techniques for identification and forgery detection of images (including biometric data), as well as detection of anomalies in keystroke, network traffic and EEG data based on the application of Benford's Law.

Professor Anthony T.S. Ho

Professor Anthony (Tony) T.S. Ho holds a Personal Chair in Multimedia Security and served as Head of Department of Computer Science, University of Surrey from 2010 to 2015. He is also a Tianjin Distinguished Professor, Guest Professors of Tianjin University of Science and Technology and of Wuhan University of Technology, China. Tony was the recipient of the prestigious Institution of Engineering and Technology (IET) Innovation in Engineering Award under the Security category for his research and commercialization work on digital watermarking in 2006.

Tony obtained his BSc (Hons) in Physical Electronics from Northumbria University in 1979, his MSc in Applied Optics from Imperial College London in 1980 and his PhD in Digital Image Processing from King's College London, University of London in 1983. After graduation, he worked in technical management positions in industry for 11 years in the UK and Canada. From 1994 to 2005, Tony was a Senior Lecturer and then Associate Professor at Nanyang Technological University (NTU), Singapore. He has published more than 150 articles in international journals and conference proceedings as well as 8 international patents granted related to watermarking and steganography.

Tony is Founding Editor-in-Chief of the International Journal of Information Security and Applications (JISA) and an Area Editor for Signal Processing: Image Communication, both published by Elsevier. He was recently appointed as Associate Editor for IEEE Transactions on Information Forensics and Security (TIFS) for three years commencing January 2016, He has also served as Associate Editor for IEEE Signal Processing Letters (SPL) (2014-2016), as well as an Associate Editor for EURASIP Journal of Image and Video Processing published by Springer. He served as Section Secretary of IEEE UK and Ireland Section (2015-2016) and has served as Technical Committee Member on a number of IEEE Technical Society Chapters including Signal Processing Society (SPS) IFS-TC, Circuits and Systems Society (CASS) MSA-TC and VSPC-TC. Tony is a Fellow of Institution of Engineering and Technology (FIET), Fellow of Institute of Physics (FInstP), Fellow of British Computer Society (FBCS) and Senior Member of IEEE.

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