Applications of Benford’s Law for Multimedia Security and Forensics

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Date: 6 December 2017 (Wednesday)
Time: 11:00 a.m. – 12:00 noon
Venue: Room PQ303, 3/Floor, PQ Core, Mong Man Wai Building,
The Hong Kong Polytechnic University

▶ Abstract

This seminar will give an overview of the theory and applications of Benford’s law for multimedia security and forensics. These include the detection of anomalies in image compression, glare effect and security attacks related to keystroke dynamic and network traffic data. Recent research based on this law has further shown that consistent anomaly patterns could be achieved for different network attacks, leading to the potential identification/pattern recognition of various types of attacks. In addition to multimedia security and forensic applications, this law has also been successfully applied in a novel way for the detection of Alzheimer’s Disease based on Electroencephalogram (EEG) data and will be highlighted in the seminar.

▶ About the Speaker

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 (IJISA) and an Area Editor for Signal Processing: Image Communication, both published by Elsevier. He was 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.

All are welcome!

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