

**Title:**

Watermarking Security and Its Application.

Abstract:

For many years, watermarking has captured the imagination of researchers. Digital watermarking protects information, conceals secrets or is used as core primitives in digital rights management schemes. Watermarking security is an emergent topic, but its concept is still in the exploration stage. Watermarking security has a border scope than watermarking robustness or fragility, since the former are not only concerned with a simple distortion in the communication processes, but they also take account of the obtainment of privileges granted by the secret parameters of the system. For watermarking robustness, it can resist common image processing, but also resist special image processing, such as printing, scan, screen shooting, etc. Moreover, besides copyright application, a variety of applications are emerging that add value to the digital media, such as broadcast monitoring, authentication, tracking content, annotation and linking content to the Web, etc. As the development of machine learning, such as deep learning, considerable progresses have been made for enabling those applications, consisting of perceptual modelling, security threats, and efficient implementations.

This workshop aims to enhance this confluence of theory and practice, highlighting influential work with these methods, future open directions, and core fundamental problems. Other exciting developments of watermarking security and applications are expected to arise from research in informed watermarking. We believe that the contribution of the workshop will be helpful for fledgling researchers to develop secure watermarking algorithms for various practical applications.

Scope and Topics:

Potential topics include but are not limited to:

- ✧ Audio watermarking
- ✧ Authentication
- ✧ Computer Vision for watermarking
- ✧ Copyright Protection
- ✧ Channel coding techniques for watermarking
- ✧ Data hiding and cryptography
- ✧ Deep learning for watermarking
- ✧ Digital Signal Processing
- ✧ Document Security
- ✧ Forensic watermarking
- ✧ Fingerprint camera identification
- ✧ High dynamic range image/video watermarking
- ✧ Steganography and steganalysis
- ✧ Visual cryptography
- ✧ Video Signal Processing
- ✧ Video Watermarking
- ✧ Watermarking based on machine learning



- ✧ Watermarking and Encryption
- ✧ Watermarking in special media
- ✧ Watermarking for different applications
- ✧ 3D Watermarking
- ✧ 3D image/video watermarking

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Bio: Li Li received the B.S. and M.S. degrees in mathematics from the Dalian University of Technology, Dalian, China, in 1994 and 1997, respectively, and the Ph.D. degree from the Computer Science Department, Zhejiang University, in 2004. She has been with the School of Computer Science and Technology, Hangzhou Dianzi University, since 2004, where she is currently a Professor. Her main research interests are broadly in data hiding, image/video/3-D mesh watermarking, QR code, and image/video processing.

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Bio: Dr Chang received the B.S. degree in applied mathematics and the M.S. degree in computer and decision sciences from National Tsinghua University, Hsinchu, Taiwan, in 1977 and 1979, respectively, and the Ph.D. degree in computer engineering from National Chiao Tung University, Hsinchu, in 1982. From 2002 to 2005, he was a Chair Professor with National Chung Cheng University. Since 2005, he has been a Chair Professor with Feng Chia University. He served as an Honorary Professor, a Consulting Professor, a Distinguished Professor, and a Guest Professor at over 50 academic institutions and received the Distinguished Alumni Award from his Alma Mater. He has published several hundreds of papers in international conferences and journals and over 30 books. Several well-known concepts and algorithms were adopted in textbooks. His current research interests include information security, computer cryptography, database design, multimedia image processing, cryptography, image compression, and data structures. He was cited over 26767 times and has an h-factor of 78 according to Google Scholar. Dr. Chang was elected as a fellow of IEEE and IET in 1999 for his contribution in the area of information security. He was also a recipient of several awards, including the Top Citation Award from Pattern Recognition Letters, the Outstanding Scholar Award from the Journal of Systems and Software, and the Ten Outstanding Young Men Award of Taiwan.

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