Contents

Digital Forensics

A Multi-purpose Image Counter-anti-forensic Method Using Convolutional Neural Networks .................................................. 3
   Jingjing Yu, Yifeng Zhan, Jianhua Yang, and Xiangui Kang

Detection of Video-Based Face Spoofing Using LBP and Multiscale DCT . . . 16
   Ye Tian and Shijun Xiang

Source Cell-Phone Identification Using Spectral Features of Device Self-noise ................................................................. 29
   Chao Jin, Rangding Wang, Diqun Yan, Biaoli Tao, Yanan Chen, and Anshan Pei

Speech Authentication and Recovery Scheme in Encrypted Domain . . . . 46
   Qing Qian, Hongxia Wang, Sani M. Abdullahi, Huan Wang, and Canghong Shi

Detecting Double H.264 Compression Based on Analyzing Prediction Residual Distribution ................................................. 61
   S. Chen, T.F. Sun, X.H. Jiang, P.S. He, S.L. Wang, and Y.Q. Shi

Identification of Electronic Disguised Voices in the Noisy Environment . . . 75
   Wencheng Cao, Hongxia Wang, Hong Zhao, Qing Qian, and Sani M. Abdullahi

Using Benford’s Law Divergence and Neural Networks for Classification and Source Identification of Biometric Images .................. 88
   Aamo Iorliam, Anthony T.S. Ho, Adrian Waller, and Xi Zhao

Source Camera Identification Based on Guided Image Estimation and Block Weighted Average ........................................... 106
   Le-Bing Zhang, Fei Peng, and Min Long

Recapture Image Forensics Based on Laplacian Convolutional Neural Networks ................................................................. 119
   Pengpeng Yang, Rongrong Ni, and Yao Zhao

Concealing Fingerprint-Biometric Data into Audio Signals for Identify Authentication .................................................. 129
   Sani M. Abdullahi, Hongxia Wang, Qing Qian, and Wencheng Cao
A Novel Robust Image Forensics Algorithm Based on L1-Norm Estimation .......................... Xin He, Qingxiao Guan, Yanfei Tong, Xianfeng Zhao, and Haibo Yu

Detection of Copy-Move Forgery in Flat Region Based on Feature Enhancement. .......................... Weiwei Zhang, Zhenghong Yang, Shaozhang Niu, and Junbin Wang

A Local Derivative Pattern Based Image Forensic Framework for Seam Carving Detection ........... Jingyu Ye and Yun-Qing Shi

Visual Cryptography

Privacy Monitor ................................................. Teng Guo, Feng Liu, Wen Wang, and BingTao Yu

Information Security Display Technology with Multi-view Effect .......................... Wen Wang, Feng Liu, Teng Guo, Yawei Ren, and Gang Shen

Random Grids-Based Threshold Visual Secret Sharing with Improved Visual Quality .................. Xuehu Yan, Yuliang Lu, Lintao Liu, and Song Wan

Halftone Visual Cryptography with Complementary Cover Images ............ Gang Shen, Feng Liu, Zhengxin Fu, Bin Yu, and Wen Wang

Collusive Attacks to Partition Authentication Visual Cryptography Scheme ................ Yawei Ren, Feng Liu, and Wen Wang


Reversible Data Hiding

Optimal Distortion Estimation for Prediction Error Expansion Based Reversible Watermarking ................................ Aniket Roy and Rajat Subhra Chakraborty

Blind 3D Mesh Watermarking Based on Sphere-Shape Template ........ Hak-Yeol Choi, Jeongho Son, Han-Ul Jang, and Heung-Kyu Lee

Fragile Watermarking Based Proofs of Retrievability for Archival Cloud Data .................... Xin Tang, Yining Qi, and Yongfeng Huang
Multiple Watermarking Using Multilevel Quantization Index Modulation. . . . 312
   Bingwen Feng, Jian Weng, Wei Lu, and Bei Pei

Increasing Secret Data Hiding Capacity in QR Code Using $3 \times 3$ Subcells. . 327
   Wisdarmanto Erlangga and Ari Moesriami Barmawi

Databases Traceability by Means of Watermarking with
   Optimized Detection . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 343
   Javier Franco-Contreras and Gouenou Coatrieux

A New Card Authentication Scheme Based on Image Watermarking
   and Encryption . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 358
   Xinxin Peng, Jianfeng Lu, Li Li, Chin-Chen Chang, and Qili Zhou

Copyright Protection for 3D Printing by Embedding Information
   Inside 3D-Printed Objects . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 370
   Kazutake Uehira, Masahiro Suzuki, Piyarat Silapasuphakornwong,
   Hideyuki Torii, and Youichi Takashima

Watermarking with Fixed Decoder for Aesthetic 2D Barcode . . . . . . . . . . 379
   Minoru Kuribayashi, Ee-Chien Chang, and Nobuo Funabiki

Two-Dimensional Histogram Modification for Reversible Data Hiding
   in Partially Encrypted H.264/AVC Videos . . . . . . . . . . . . . . . . . . . . . . . . . 393
   Dawen Xu, Yani Zhu, Rangding Wang, Jianjing Fu, and Kai Chen

Second Order Predicting-Error Sorting for Reversible Data Hiding . . . . . . 407
   Jiajia Xu, Hang Zhou, Weiming Zhang, Ruiqi Jiang, Guoli Ma,
   and Nenghai Yu

Reversible Data Hiding for Texture Videos and Depth Maps Coding
   with Quality Scalability . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 421
   Yuanzhi Yao, Weiming Zhang, and Nenghai Yu

Reversible Data Hiding in Encrypted AMBTC Compressed Images . . . . . . . 436
   Xuejing Niu, Zhaoxia Yin, Xinpeng Zhang, Jin Tang, and Bin Luo

Reversible 3D Image Data Hiding with Quality Enhancement . . . . . . . . . . 446
   Wengai Liu, Rongrong Ni, and Yao Zhao

An Adaptive Reversible Data Hiding Scheme for JPEG Images . . . . . . . . . 456
   Jiaxin Yin, Rui Wang, Yuanfang Guo, and Feng Liu

Separable Multiple Bits Reversible Data Hiding in Encrypted Domain . . . . . 470
   Yan Ke, Mingqing Zhang, and Jia Liu
Steganography and Steganalysis

Distortion Function for Spatial Image Steganography Based on the Polarity of Embedding Change ............................................ 487
   Zichi Wang, Jinpeng Lv, Qingde Wei, and Xinpeng Zhang

Embedding Strategy for Batch Adaptive Steganography ............... 494
   Zengzhen Zhao, Qingxiao Guan, Xianfeng Zhao, Haibo Yu,
   and Changjun Liu

Adaptive Steganography Using 2D Gabor Filters and Ensemble Classifiers... 506
   Yuan Bian, Guangming Tang, Shuo Wang, Zhanzhan Gao,
   and Shiyuan Chen

An Adaptive Video Steganography Based on Intra-prediction Mode
and Cost Assignment .................................................. 518
   Lingyu Zhang and Xianfeng Zhao

Segmentation Based Steganalysis of Spatial Images Using Local
Linear Transform ....................................................... 533
   Ran Wang, Xijian Ping, Shaozhang Niu, and Tao Zhang

Reliable Pooled Steganalysis Using Fine-Grained Parameter Estimation
and Hypothesis Testing .............................................. 550
   Wei Huang and Xianfeng Zhao

Deep Learning on Spatial Rich Model for Steganalysis .................... 564
   Xiaoyu Xu, Yifeng Sun, Guangming Tang, Shiyuan Chen, and Jian Zhao

A High Embedding Capacity Data Hiding Scheme Based upon
Permutation Vectors ................................................... 578
   Chin-Chen Chang, Jen-Chun Chang, Yun-Hong Chou,
   and Hsin-Lung Wu

Data Hiding in H.264/AVC Video Files Using the Coded Block Pattern .... 588
   Hong Zhang, Yun Cao, Xianfeng Zhao, Haibo Yu, and Changjun Liu

A Study of the Two-Way Effects of Cover Source Mismatch and Texture
Complexity in Steganalysis ........................................... 601
   Donghui Hu, Zhongjin Ma, Yuqi Fan, and Lina Wang

Erratum to: Speech Authentication and Recovery Scheme
in Encrypted Domain ................................................ 61
   Qing Qian, Hongxia Wang, Sani M. Abdullahi, Huan Wang,
   and Canghong Shi

Author Index ........................................................................ 617
Digital Forensics and Watermarking
15th International Workshop, IWDW 2016, Beijing, China, September 17-19, 2016, Revised Selected Papers
Shi, Y.Q.; Kim, H.J.; Perez-Gonzalez, F.; Liu, F. (Eds.)
2017, XIV, 618 p. 269 illus., Softcover
ISBN: 978-3-319-53464-0