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 Anshen 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
145

Detection of Copy-Move Forgery in Flat Region Based on Feature Enhancement.
Weiwei Zhang, Zhenghong Yang, Shaozhang Niu, and Junbin Wang
159

A Local Derivative Pattern Based Image Forensic Framework for Seam Carving Detection.
Jingyu Ye and Yun-Qing Shi
172

Visual Cryptography

Privacy Monitor
Teng Guo, Feng Liu, Wen Wang, and BingTao Yu
187

Information Security Display Technology with Multi-view Effect
Wen Wang, Feng Liu, Teng Guo, Yawei Ren, and Gang Shen
198

Random Grids-Based Threshold Visual Secret Sharing with Improved Visual Quality
Xuehu Yan, Yuliang Lu, Lintao Liu, and Song Wan
209

Halftone Visual Cryptography with Complementary Cover Images
Gang Shen, Feng Liu, Zhengxin Fu, Bin Yu, and Wen Wang
223

Collusive Attacks to Partition Authentication Visual Cryptography Scheme
Yawei Ren, Feng Liu, and Wen Wang
238

On the Robustness of Visual Cryptographic Schemes
Sabyasachi Dutta, Partha Sarathi Roy, Avishek Adhikari, and Kouichi Sakurai
251

Reversible Data Hiding

Optimal Distortion Estimation for Prediction Error Expansion Based Reversible Watermarking
Aniket Roy and Rajat Subhra Chakraborty
265

Blind 3D Mesh Watermarking Based on Sphere-Shape Template
Hak-Yeol Choi, Jeongho Son, Han-Ul Jang, and Heung-Kyu Lee
280

Fragile Watermarking Based Proofs of Retrievability for Archival Cloud Data.
Xin Tang, Yining Qi, and Yongfeng Huang
296
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Watermarking Using Multilevel Quantization Index Modulation</td>
<td>312</td>
</tr>
<tr>
<td><em>Bingwen Feng, Jian Weng, Wei Lu, and Bei Pei</em></td>
<td></td>
</tr>
<tr>
<td>Increasing Secret Data Hiding Capacity in QR Code Using 3 × 3 Subcells</td>
<td>327</td>
</tr>
<tr>
<td><em>Wisdarmanto Erlangga and Ari Moesriami Barmawi</em></td>
<td></td>
</tr>
<tr>
<td>Databases Traceability by Means of Watermarking with Optimized Detection</td>
<td>343</td>
</tr>
<tr>
<td><em>Javier Franco-Contreras and Gouenou Coatrieux</em></td>
<td></td>
</tr>
<tr>
<td>A New Card Authentication Scheme Based on Image Watermarking and Encryption</td>
<td>358</td>
</tr>
<tr>
<td><em>Xinxin Peng, Jianfeng Lu, Li Li, Chin-Chen Chang, and Qili Zhou</em></td>
<td></td>
</tr>
<tr>
<td>Copyright Protection for 3D Printing by Embedding Information Inside 3D-Printed Objects</td>
<td>370</td>
</tr>
<tr>
<td><em>Kazutake Uehira, Masahiro Suzuki, Piyarat Silapasuphakornwong, Hideyuki Torii, and Youichi Takashima</em></td>
<td></td>
</tr>
<tr>
<td>Watermarking with Fixed Decoder for Aesthetic 2D Barcode</td>
<td>379</td>
</tr>
<tr>
<td><em>Minoru Kuribayashi, Ee-Chien Chang, and Nobuo Funabiki</em></td>
<td></td>
</tr>
<tr>
<td>Two-Dimensional Histogram Modification for Reversible Data Hiding in Partially Encrypted H.264/AVC Videos</td>
<td>393</td>
</tr>
<tr>
<td><em>Dawen Xu, Yani Zhu, Rangding Wang, Jianjing Fu, and Kai Chen</em></td>
<td></td>
</tr>
<tr>
<td>Second Order Predicting-Error Sorting for Reversible Data Hiding</td>
<td>407</td>
</tr>
<tr>
<td><em>Jiajia Xu, Hang Zhou, Weiming Zhang, Ruiqi Jiang, Guoli Ma, and Nenghai Yu</em></td>
<td></td>
</tr>
<tr>
<td>Reversible Data Hiding for Texture Videos and Depth Maps Coding with Quality Scalability</td>
<td>421</td>
</tr>
<tr>
<td><em>Yuanzhi Yao, Weiming Zhang, and Nenghai Yu</em></td>
<td></td>
</tr>
<tr>
<td>Reversible Data Hiding in Encrypted AMBTC Compressed Images</td>
<td>436</td>
</tr>
<tr>
<td><em>Xuejing Niu, Zhaoxia Yin, Xinpeng Zhang, Jin Tang, and Bin Luo</em></td>
<td></td>
</tr>
<tr>
<td>Reversible 3D Image Data Hiding with Quality Enhancement</td>
<td>446</td>
</tr>
<tr>
<td><em>Wengai Liu, Rongrong Ni, and Yao Zhao</em></td>
<td></td>
</tr>
<tr>
<td>An Adaptive Reversible Data Hiding Scheme for JPEG Images</td>
<td>456</td>
</tr>
<tr>
<td><em>Jiaxin Yin, Rui Wang, Yuanfang Guo, and Feng Liu</em></td>
<td></td>
</tr>
<tr>
<td>Separable Multiple Bits Reversible Data Hiding in Encrypted Domain</td>
<td>470</td>
</tr>
<tr>
<td><em>Yan Ke, Mingqing Zhang, and Jia Liu</em></td>
<td></td>
</tr>
</tbody>
</table>
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 ................................................................. E1
  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