Contents

Steganography and Steganalysis

Bitspotting: Detecting Optimal Adaptive Steganography .......................... 3
   Benjamin Johnson, Pascal Schöttle, Aron Laszka, Jens Grossklags, and Rainer Böhme

Improved Algorithm of Edge Adaptive Image Steganography
Based on LSB Matching Revisited Algorithm ................................. 19
   Fangjun Huang, Yane Zhong, and Jiwu Huang

Steganography Based on Adaptive Pixel-Value Differencing
Scheme Revisited ................................................................. 32
   Hong Zhang, Qingxiao Guan, and Xianfeng Zhao

Non-uniform Quantization in Breaking HUGO ............................... 48
   Licong Chen, Yun Qing Shi, Patchara Sutthiwan, and Xinxin Niu

Steganalysis of Compressed Speech Based on Markov and Entropy ...... 63
   Haibo Miao, Liusheng Huang, Yao Shen, Xiaorong Lu, and Zhili Chen

Visual Cryptography

Improved Tagged Visual Cryptograms by Using Random Grids .......... 79
   Duanhao Ou, Xiaotian Wu, Lu Dai, and Wei Sun

Cheating Immune Block-Based Progressive Visual Cryptography ...... 95
   Ching-Nung Yang, Yi-Chin Lin, and Chih-Cheng Wu

Visual Cryptography and Random Grids Schemes ........................... 109
   Zheng-xin Fu and Bin Yu

Secret Sharing in Images Based on Error-Diffused Block Truncation Coding and Error Diffusion ......................................................... 123
   Duanhao Ou, Xiaotian Wu, Lu Dai, and Wei Sun

Reversible Data Hiding

Reversible Data Hiding in Encrypted H.264/AVC Video Streams .......... 141
   Dawen Xu, Rangding Wang, and Yun Qing Shi
Using RZL Coding to Enhance Histogram-Pair Based Image Reversible Data Hiding .......................................................... 153

Xuefeng Tong, Guorong Xuan, Guangce Shen, Xiaoli Huan, and Yun Qing Shi

Forensics

Detecting Non-aligned Double JPEG Compression Based on Refined Intensity Difference and Calibration .............................. 169

Jianquan Yang, Guopu Zhu, Junlong Wang, and Yun Qing Shi

A Novel Method for Detecting Image Sharpening Based on Local Binary Pattern ................................................................. 180

Feng Ding, Guopu Zhu, and Yun Qing Shi

Camera Source Identification Game with Incomplete Information .......... 192

Hui Zeng and Xiangui Kang

Detecting Traitors in Re-publishing Updated Datasets ...................... 205

Anh-Tu Hoang, Hoang-Quoc Nguyen-Son, Minh-Triet Tran, and Isao Echizen

On User Interaction Behavior as Evidence for Computer Forensic Analysis ................................................................. 221

Chao Shen, Zhongmin Cai, Roy A. Maxion, and Xiaohong Guan

Effective Video Copy Detection Using Statistics of Quantized Zernike Moments ................................................................. 232

Jiehao Chen, Chenglong Chen, and Jiangqun Ni

Identifying Video Forgery Process Using Optical Flow .................... 244

Wan Wang, Xinghao Jiang, Shilin Wang, Meng Wan, and Tanfeng Sun

A Huffman Table Index Based Approach to Detect Double MP3 Compression ................................................................. 258

Pengfei Ma, Rangding Wang, Diqun Yan, and Chao Jin

Poster Session

Reversible and Robust Audio Watermarking Based on Quantization Index Modulation and Amplitude Expansion ........................ 275

Akira Nishimura

Visual Cryptography Schemes Based in $k$-Linear Maps .................... 288

Agustín Moreno Cañadas, Nelly Paola Palma Vanegas, and Margoth Hernández Quitián
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Hybrid Feature Based Method for Distinguishing Computer Graphics</td>
<td>303</td>
</tr>
<tr>
<td>and Photo-Graphic Image</td>
<td></td>
</tr>
<tr>
<td>Shang Gao, Cong Zhang, Chan-Le Wu, Gang Ye, and Lei Huang</td>
<td></td>
</tr>
<tr>
<td>A Distributed Scheme for Image Splicing Detection</td>
<td>314</td>
</tr>
<tr>
<td>Xudong Zhao, Shilin Wang, Shenghong Li, Jianhua Li, and Xiang Lin</td>
<td></td>
</tr>
<tr>
<td>A New Reversible Data Hiding Scheme Based on Efficient Prediction</td>
<td>326</td>
</tr>
<tr>
<td>Jian Li, Xiaolong Li, and Xingming Sun</td>
<td></td>
</tr>
<tr>
<td>Digital Forensics of Printed Source Identification for Chinese Characters</td>
<td>337</td>
</tr>
<tr>
<td>Min-Jen Tsai, Jung Liu, Jin-Sheng Yin, and Imam Yuadi</td>
<td></td>
</tr>
<tr>
<td>A Cheat-Prevention Visual Secret Sharing Scheme with Minimum Pixel Expansion</td>
<td>362</td>
</tr>
<tr>
<td>Shenchuan Liu, Masaaki Fujiyoshi, and Hitoshi Kiya</td>
<td></td>
</tr>
<tr>
<td>Reversible Audio Information Hiding Based on Integer DCT Coefficients with Adaptive Hiding Locations</td>
<td>376</td>
</tr>
<tr>
<td>Xuping Huang, Nobutaka Ono, Isao Echizen, and Akira Nishimura</td>
<td></td>
</tr>
</tbody>
</table>

**Watermarking**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Restorable Semi-fragile Watermarking Combined DCT with Interpolation</td>
<td>393</td>
</tr>
<tr>
<td>Yaoran Huo, Hongjie He, and Fan Chen</td>
<td></td>
</tr>
<tr>
<td>A Compressive Sensing Based Quantized Watermarking Scheme with Statistical Transparency Constraint</td>
<td>409</td>
</tr>
<tr>
<td>Claude Delpha, Said Hijazi, and Remy Boyer</td>
<td></td>
</tr>
<tr>
<td>Watermarking-Based Perceptual Hashing Search Over Encrypted Speech</td>
<td>423</td>
</tr>
<tr>
<td>Hongxia Wang, Linna Zhou, Wei Zhang, and Shuang Liu</td>
<td></td>
</tr>
</tbody>
</table>

**Anonymizing and Plate Recognition**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anonymizing Temporal Phrases in Natural Language Text to be Posted on Social Networking Services</td>
<td>437</td>
</tr>
<tr>
<td>Hoang-Quoc Nguyen-Son, Anh-Tu Hoang, Minh-Triet Tran, Hiroshi Yoshiura, Noboru Sonehara, and Isao Echizen</td>
<td></td>
</tr>
<tr>
<td>Improved License Plate Recognition for Low-Resolution CCTV Forensics by Integrating Sparse Representation-Based Super-Resolution</td>
<td>452</td>
</tr>
<tr>
<td>Hyun-seok Min, Seung Ho Lee, Wesley De Neve, and Yong Man Ro</td>
<td></td>
</tr>
</tbody>
</table>
Poster Session

Hiding a Secret Pattern into Color Halftone Images .......................... 465
   Yuanfang Guo, Oscar C. Au, Ketan Tang, and Jiahao Pang

An Image Authentication Scheme for Accurate Localization and Restoration ... 475
   Qunting Yang and Tiegang Gao

Generalized Histogram Shifting-Based Blind Reversible Data Hiding
   with Balanced and Guarded Double Side Modification ...................... 488
   Masaaki Fujiyoshi

New Forensic Methods for OOXML Format Documents ......................... 503
   Zhangjie Fu, Xingming Sun, Lu Zhou, and Jiangang Shu

High Capacity Data Hiding Scheme for Binary Images Based on Minimizing
   Flipping Distortion ......................................................... 514
   Bingwen Feng, Wei Lu, and Wei Sun

Author Index ................................................................. 529
Digital-Forensics and Watermarking
12th International Workshop, IWDW 2013, Auckland, New Zealand, October 1–4, 2013. Revised Selected Papers
Shi, Y.Q.; Kim, H.J.; Pérez-González, F. (Eds.)
2014, XVI, 530 p. 239 illus., Softcover