

IS&T International Symposium on Electronic Imaging Science and Technology 2016

**Media Watermarking, Security, and
Forensics 2016**

**San Francisco, California, USA
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Editors:

**Adnan M. Alattar
Nasir D. Memon**

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Media Watermarking, Security, and Forensics 2016

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Monday, February 15, 2016

Forensics

Session Chair: Sebastiano Battiato, University of Catania (Italy)

8:50 – 10:10 am

Continental Ballroom 3

8:50

MWSF Conference Opening Remarks

8:55

MWSF-066

Ambiguity attack on the integrity of a genuine picture by producing another picture immune to generic digital forensic test, Jun Yu¹, Enping Li², and Scott Craver³; ¹Marvell Semiconductors, Inc., ²Eastern Kentucky University, and ³Binghamton University (USA) 1

9:20

MWSF-067

Compression forensics beyond the first significant digit, Sujoy Chakraborty and Matthias Kirchner, Binghamton University (USA) 4

9:45

MWSF-068

Detecting copy-move forgeries in scanned text documents, Svetlana Abramova and Rainer Böhme, Universität Innsbruck (Austria) 11

10:10 – 10:30 am Coffee Break

Watermarking

Session Chair: Gaurav Sharma, University of Rochester (USA)

10:30 am – 12:10 pm

Continental Ballroom 3

10:30

MWSF-069

Improvement of trade-off between compression tolerance and perceptibility of video watermark for broadcasting, Keizo Kato, Kensuke Kuraki, and Ryuta Tanaka, Fujitsu Laboratories Ltd. (Japan) 20

10:55

MWSF-070

Optically written watermarking technology using temporally and spatially luminance-modulated light, Kohei Ohshita, Hiroshi Unno, and Kazutake Uehira, Kanagawa Institute of Technology (Japan) 29

11:20

MWSF-071

Maximal stable extremal regions for robust video watermarking, Waldemar Berchtold, Marcel Schaefer, and Martin Steinebach, Fraunhofer SIT (Germany) 35

11:45

MWSF-072

Telltale watermarks for counting JPEG compressions, Matthias Carnein¹, Pascal Schöttle², and Rainer Böhme²; ¹University of Münster (Germany) and ²Universität Innsbruck (Austria) 43

12:10 – 2:00 pm Lunch Break

EI 2016 Opening Plenary and Symposium Awards

Session Chair: Choon-Woo Kim (Inha University) N/A

2:00 – 3:00 PM

Continental Ballroom 5

Illuminating a bright future for medicine, Audrey K. Bowden, Stanford University (USA) N/A

3:00 – 3:30 pm Coffee Break

Media Watermarking, Security, and Forensics 2016

Identification

Session Chair: Adnan Alattar, Digimarc Corporation (USA)

3:30 – 4:00 pm

Continental Ballroom 3

3:30

MWSF-073

Attacks on speaker identification systems constrained to speech-to-text decoding, Alireza Farrokh Baroughi¹, Daniel Douglas², and Scott Craver¹; ¹Binghamton University and ²Temple University (USA) 53

5:00 – 6:00 pm El 2016 Symposium Reception

Tuesday, February 16, 2016**Steganography**

Session Chair: Jessica Fridrich, SUNY Binghamton (USA)

8:50 – 10:10 am

Continental Ballroom 3

8:50

Opening Remarks

8:55

MWSF-074

Avoiding detection on twitter: embedding strategies for linguistic steganography, Alex Wilson and Andrew Ker, University of Oxford (United Kingdom) 60

9:20

MWSF-075

Separating steganographic images by embedding key, Tu-Thach Quach, University of New Mexico (USA) 69

9:45

MWSF-076

Toss that BOSSbase, Alice!, Vahid Sedighi¹, Jessica Fridrich¹, and Rémi Cogranne²; ¹Binghamton University (USA) and ²Université de Technologie Troyes (France) 75

10:10 – 10:30 am Coffee Break

Steganalysis

Session Chair: Vojtech Holub, Digimarc Corporation {}

10:30 am – 12:10 pm

Continental Ballroom 3

10:30

MWSF-077

Accelerating the DCTR features extraction for JPEG steganalysis based on CUDA, Chao Xia, Qingxiao Guan, Xianfeng Zhao, and Yong Deng, Chinese Academy of Sciences (China) 84

10:55

MWSF-078

Deep learning is a good steganalysis tool when embedding key is reused for different images, even if there is a cover source-mismatch, Lionel Pibre^{2,3}, Jérôme Pasquet^{2,3}, Dino Ienco^{2,3}, and Marc Chaumont^{1,2,3}, IIRMM; ¹Université de Nîmes, ²Université Montpellier, ³CNRS (France) 90

11:20

MWSF-079

Malicons: Detecting Payload in Favicons, Tomáš Pevný^{1,2}; Martin Kopp^{2,1}; Jakub Křoustek²; Andrew D. Ker⁴; ¹Czech Technical University in Prague (Czech Republic); ²Cisco R&D Center in Prague, Cisco Systems, Inc. (Czech Republic); ³AVG Technologies (Czech Republic); ⁴Oxford University (UK) 101

11:45

MWSF-080

Improving selection-channel-aware steganalysis features, Tomáš Denmark and Jessica Fridrich, Binghamton University (USA); Pedro Comesaña-Alfaro, University of Vigo (Spain) 110

12:10 – 2:00 pm Lunch Break

El 2016 Tuesday Plenary and Symposium AwardsSession Chair: Nitin Sampal (Rochester Institute of Technology) N/A
2:00 – 3:00 PM

Continental Ballroom 5

Pushing computational photography deeper into imaging system design, Ren Ng, University of California, Berkeley (USA) N/A

3:00 – 3:30 pm Coffee Break

Keynote: Security, Privacy, and Regulatory Challenges of Unmanned Aerial Vehicle Integration

Session Chair: Nasir Memon, New York University (USA) N/A

3:30 – 4:30 pm

Continental Ballroom 3

MWSF-081

Security, privacy, and regulatory challenges of unmanned aerial vehicle integration, Evan Carr, AppFolio Inc. (USA) N/A**El 2016 Symposium Demonstration Session and Exhibit Hall****Happy Hour****5:30 – 7:00 PM**

Continental Ballroom Foyer

Wednesday, February 17, 2016**Banknote Security**

Session Chair: Scott Craver, Binghamton University (USA)

8:50 – 10:10 am

Continental Ballroom 3

8:50

MWSF-082

Banknote crease detection and banknote fitness classification, Reinhold Huber-Mörk, and Johannes Ruisz, Austrian Institute of Technology (Austria) 118

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MWSF-083

Forensic authentication of banknotes on mobile phones, Thomas Dewaele, Maurits Diephuis, Taras Holotyak and Slava Voloshynovskiy, Université de Genève (Switzerland) 124

9:40

MWSF-084

Security evaluation based on the analytic hierarchy process for first-line anti-counterfeit elements, Manabu Yamakoshi, Junichi Tanaka, and Hiroshi Iwasaki, National Printing Bureau of Japan (Japan) 132

10:10 – 10:30 am Coffee Break

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Fingerprinting

Session Chair: Matthias Kirchner, Binghamton University (USA)

10:30 am – 12:10 pm

Continental Ballroom 3

10:30 MWSF-085
A novel attack model for collusion secure fingerprinting codes, Marcel Marcel Schäfer¹, Waldemar Berchtold¹, Teetje Stark², Nils Reimers³, and Martin Steinebach¹; ¹Fraunhofer-Institute SIT, ²Freie Universität Berlin, and ³Technische Universität Darmstadt (Germany) 138

10:55 MWSF-086
Effect of compression on sensor-fingerprint based camera identification, Miroslav Goljan¹, Mo Chen¹, Pedro Comesaña², and Jessica Fridrich¹ 149

11:20 MWSF-087
Patch-based desynchronization of digital camera sensor fingerprints, John Entrieri and Matthias Kirchner, Binghamton University (USA) 159

11:45 MWSF-088
Robust smartphone fingerprint by mixing device sensors features for mobile strong authentication, Irene Amerini¹, Paolo Bestagini², Luca Bondi², Roberto Caldelli¹, Matteo Casini¹, and Stefano Tubaro¹; ¹University of Florence, ²Polytechnic of Milano, and ³CNIT - National Interuniversity Consortium for Telecommunications (Italy) 168

12:10 – 2:00 pm Lunch Break

EI 2016 Wednesday Plenary and Symposium Awards

Session Chair: Choon-Woo Kim (Inha University) N/A

2:00 – 3:00 PM

Continental Ballroom 5

Intel® RealSense Technology: Adding human-like sensing and interactions to computing devices, Achin Bhowmik, Intel Corporation (USA) N/A

3:00 – 3:30 pm Coffee Break

Noise & Quality

Session Chair: Marc Chaumont, LIRMM Montpellier France (France)

3:30 – 4:30 pm

Continental Ballroom 3

3:30 MWSF-089
Experimental study of Print-and-Scan impact as random process, Liliia Tkachenko^{1,2}, William Puech¹, Olivier Strauss¹, and Christophe Destruel²; ¹University of Montpellier and ²Authentication Industries (France) 176

3:55 MWSF-090
Quality metric for 2D textures on 3D objects, Waldemar Berchtold, Marcel Schaefer, Sascha Wombacher, and Martin Steinebach, Fraunhofer SIT (Germany) 187

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Media Watermarking, Security, and Forensics Concluding Remarks**EI 2016 Symposium Interactive Papers Session****5:30 – 7:00 PM**

Continental Ballroom 6