

PROCEEDINGS



# **Media Watermarking, Security, and Forensics 2014**

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*Editors*

**3–5 February 2014**  
**San Francisco, California, United States**

*Sponsored*  
IS&T—The Society for Imaging Science and Technology  
SPIE

*Published by*  
SPIE

**Volume 9028**

Proceedings of SPIE 0277-786X, V. 9028

Media Watermarking, Security, and Forensics 2014, edited by Adnan M. Alattar, Nasir D. Memon,  
Chad D. Heitzenrater, Proc. of SPIE-IS&T Electronic Imaging, SPIE Vol. 9028, 902801  
© 2014 SPIE-IS&T · CCC code: 0277-786X/14/\$18 · doi: 10.1117/12.2062933

SPIE-IS&T/ Vol. 9028 902801-1

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publishers are not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Media Watermarking, Security, and Forensics 2014*, edited by Adnan M. Alattar, Nasir D. Memon, Chad D. Heitzenrater, Proceedings of SPIE-IS&T Electronic Imaging, SPIE Vol. 9028, Article CID Number (2014)

ISSN: 0277-786X

ISBN: 9780819499455

Copublished by

**SPIE**

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Printed in the United States of America.

**Paper Numbering:** Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

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## Introduction

It is our pleasure to bring you the papers presented at the 2014 Media Watermarking, Security, and Forensics Conference. This year's conference was a great success, as it maintained and strengthened its status as the premier conference in the field. It was held at the Hilton, in the popular tourist destination of downtown San Francisco. This convenient location let the attendees enjoy their San Francisco stay while participating in the outstanding technical exchange this forum is well known for.

For three full days, researchers from all over the globe in the field of watermarking, steganography, and forensics presented state-of-the-art research results in a lecture style. Thirty-one top-quality, original research papers were presented in a well-attended single track. Many great papers were submitted, but unfortunately not all could be accommodated by the conference. Attendees from academic, industrial, and governmental establishments enjoyed the presentations of latest research results. After the presentations and during the coffee breaks, presenters enjoyed discussing their research approaches and results with colleagues. The valuable feedback and comments they received planted the seeds for more research to advance the state-of-the-art of watermarking, security, and forensics.

Attendees also enjoyed the strong industrial flavor of this conference. This year, three distinguished keynote speakers from industry and academia addressed recent technological developments in their field of expertise:

- Sunil Jain from Intel Corporation gave an excellent speech on digital wallet and mobile payment, which included a description of his "Dream Wallet."
- Markus Jakobsson from ZapFraud gave a wonderful speech titled, "Authenticate or Not." He exposed an array of mistaken beliefs relating to authentication and authenticity.
- Hany Farid from Dartmouth College gave a great talk titled, "Photo Forensics from Shadows and Shading." He presented a clever way to detect inconsistency in lighting from shading and shadows in an image.

All three speeches were informative, illuminating, and well-received by the audience.

In addition to the keynote speeches, representatives from the industry gave three demos of their innovative products and solutions of related technologies:

- Digimarc Corporation gave a video demo of their Digimarc Barcode technology, which is an outstanding application of watermarking. This demo was a recording of Digimarc breaking the Guinness World Record for fastest scanning and bagging of 50 items at the National Retail Forum in NYC.
- Konica Minolta demoed their self-verifiable paper documents and automatic content verification system. Verification is done using a 2D color barcode printed on the document. A compressed version of the information on the document is stored in this barcode.
- Hewlett Packard demoed their watermark-based Weekend GoGuide application that allows a participant to receive printed promotions on his or her Internet-connected printer. The user can view more information about this promotion by snapping a photo of it using his or her mobile device.

All three demos showed the great potential of the technology being developed by the attendees of the conference.

New this year, to acknowledge excellent contributions to the field, the program committee of the conference decided to offer a Best Paper award. The committee sought input from the session chairs of the conference, and in response they received the following nominations:

1. "Feature-based watermark localization in digital capture systems," by Vojtech Holub, Binghamton Univ. (United States); Tomas Filler, Digimarc, (United States).
2. "A Mishmash of Methods to Mitigate the Model Mess Mismatch," by Andrew Ker, Univ. of Oxford (United Kingdom); Tomas Pevny, Czech Technical Univ. in Prague (Czech Republic).
3. "Cover Estimation and Payload Location using Markov Random Fields" by Tu-Thach Quach, Sandia National Labs (United States).
4. "A framework for fast and secure packaging identification on mobile phones," by Maurits Diephuis, Svyatoslav V. Voloshynovskiy, Taras Holotyak, Nabil Stendardo, Univ. of Geneva (Switzerland); Bruno Keel, U-NICA Group (Switzerland).
5. "Content identification: binary content fingerprinting versus binary content encoding," by Sohrab Ferdowsi, Univ. of Geneva (Switzerland); Svyatoslav V. Voloshynovskiy, Univ. of Geneva (Switzerland); Dimche Kostadinov, Univ. of Geneva (Switzerland).

All nominated papers will be reviewed by the technical committee of the conference. The papers will be judged based on their originality, creativity, clarity, and potential impact on the field of watermarking, security, and forensics. The winner will be announced in the next year's call for papers or in a special event during next year's conference.

Finally, the conference chairs express appreciation for all the hard work and for the enthusiastic participation of the researchers, scientists, practitioners, industry and government representatives, keynote speakers, and the organization committee of the conference. The chairs also congratulate all of you on the success of this conference. Without your dedicated effort, little could have been achieved. Together, we will have another great conference next year. Thank you.

**Adnan Alattar**  
**Nasir Memon**  
**Chad Heitzenrater**

