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3D Image Processing, Measurement (3DIPM), and Applications 2016

Editors: William Puech, Lab. d'Informatique de Robotique et de Microelectronique de Montpellier (France), and
Robert Sitnik, Warsaw Univ. of Technology (Poland)

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3D Image Processing, Measurement (3DIPM), and Applications 2016

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3D Image Processing, Measurement (3DIPM), and Applications 2016

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Robert Sitnik, Warsaw University of Technology (Poland)

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Wednesday, February 17, 2016

3DIPM/SD&A: Stereoscopic Image Processing and Depth Mapping

Joint Session

Session Chairs: William Puech, University of Montpellier (France) and Michael Weissman, TrueVision Systems (USA)

10:50 am – 12:30 pm

Continental Ballroom 5

This session is jointly sponsored by: Stereoscopic Displays and Applications XXVII and 3D Image Processing, Measurement (3DIPM), and Applications 2016.

10:50 SDA-034

Geometrically constrained sub-pixel disparity estimation from stereo images of the retinal fundus, Mohamad Kharboutly, Carlos Vazquez, Stéphane Coulombe, and Jacques De Guise, École de technologie supérieure (Canada)

11:10 3DIPM-035

3D autostereoscopic display image generation using direct light field rendering, Young Ju Jeong, Yang Ho Cho, Hyoseok Hwang, Hyun Sung Chang, Dongkyung Nam, and C.-C. Jay Kuo; Samsung Advanced Institute of Technology (South Korea)

11:30 SDA-036

A new hole filling method based on 3D geometric transformation for synthesized image, Hak Gu Kim and Yong Man Ro, Korea Advanced Institute of Science and Technology (South Korea)

11:50 3DIPM-037

Blue noise sampling of surfaces from stereoscopic images, Frederic Payan, Jean-Luc Peyrot, and Marc Antonini, Laboratory I3S, University Nice - Sophia Antipolis and CNRS (France) - UMR 7271 (France)

12:30 – 2:00 pm Lunch Break

El 2016 Wednesday Plenary and Symposium Awards

Session Chair: Choon-Woo Kim (Inha University)

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)

3:00 – 3:30 pm Coffee Break

3D Data Processing and Compression

Session Chair: Robert Sitnik, Warsaw University of Technology (Poland)

3:30 – 5:10 pm

Union Square 25

3:30 3DIPM-396

Secure high capacity data hiding for 3D meshes, Vincent Liti^{1,3}, Adrian Bors², William Puech¹, and Jean-Pierre Pedeboy²; ¹LIRMM (France), ²University of York (United Kingdom), and ³STRATEGIES (France)

3D Image Processing, Measurement (3DIPM), and Applications 2016

3:50 3DIPM-397
Point cloud compression using depth maps, Arnaud Bletterer¹, Frédéric Payan¹, Marc Antonini¹, and Anis Meflah²; ¹Laboratory I3S, University of Nice - Sophia Antipolis and CNRS (France) - UMR 7271 and ²Cintoo3D (France)

4:10 3DIPM-398
Truncated signed distance function volume integration based on voxel-level optimization for 3D reconstruction, Fei Li, Yunfan Du, and Rujie Liu, Fujitsu Research & Development Center Co., Ltd. (China)

4:30 3DIPM-399
Depth assisted composition of synthetic and real 3D scenes, Santiago Cortes, Olli Suominen, and Atanas Gotchev, Tampere University of Technology (Finland)

4:50 3DIPM-400
Parallax scan based image segmentation using lens supplied metadata, Christopher Mayhew, Ji Gou, and Sanjay Oak, Vision III Imaging, Inc. (USA)

3D Image Processing, Measurement (3DIPM), and Applications 2016 Interactive Papers Session

5:30 – 7:00 pm

Continental Ballroom 6

The following works will be presented at the EI 2016 Symposium Interactive Papers Session.

3DIPM-401
Efficient filling of disparity holes using resolution decoupling, Alexey Supikov, Maha El Choubassi, and Oscar Nestares, Intel Corporation (USA)

3DIPM-402
Temporal domain stereo matching based on feature points for restriction of error propagation, Ji-Hun Mun and Yo-Sung Ho, GIST (South Korea)

3DIPM-403
Cavern halos: Exploring spatial and nonspatial cosmological data in an immersive virtual environment, Carlos Uribe, University of Illinois at Chicago and EVL (USA)

3DIPM-404
Non-uniform resampling in perspective compensated large scale 3D visualization, Maria Shcherban, Olli Suominen, and Atanas Gotchev, Tampere University of Technology (Finland)

3DIPM-405
Depth estimation algorithm for color coded aperture camera, Ivan Panchenko, Vladimir Paramonov, and Victor Bucha, Samsung R&D Institute Russia (Russian Federation)

EI 2016 Symposium Interactive Papers Session

5:30 – 7:00 PM

Continental Ballroom 6

Thursday February 18, 2016

3D Acquisition and Preprocessing

Session Chair: Robert Sitnik, Warsaw University of Technology (Poland)

9:10 – 10:10 am

Golden Gate 6/7

9:10 3DIPM-406
High-fidelity Time-of-Flight edge sampling using superpixels, Thomas Hach¹, Sascha Knob², and Johannes Steurer¹; ¹Arnold & Richter Cinetechnik and ²Hochschule RheinMain (Germany)

9:30 3DIPM-407
3D shape template generation from RGB-D images capturing a moving and deforming object, Hikari Takehara, Yuta Nakashima, Tomokazu Sato, and Naokazu Yokoya, Nara Institute of Science and Technology (Japan)

9:50 3DIPM-408
Implementation of 3D object reconstruction using multiple Kinect cameras, Dong-won Shin and Yo-Sung Ho, Gwangju Institute of Science and Technology (South Korea)

10:10 – 10:40 am Coffee Break

3DIPM/IPAS: 3D Scene Sensing and Object Recording Joint Session

Session Chair: Robert Sitnik, Warsaw University of Technology (Poland)

10:40 am – 12:10 pm

Golden Gate 6/7

This session is jointly sponsored by: 3D Image Processing, Measurement (3DIPM), and Applications 2016, and Image Processing: Algorithms and Systems XIV.

10:40

Joint Session Introduction

10:50 3DIPM-044
Shadow detection on 3D point cloud, Shuyang Sheng and B. Keith Jenkins, University of Southern California (USA)

11:10 3DIPM-045
lm2Fit: Fast 3D model fitting and anthropometrics using single consumer depth camera and synthetic data, Qiaosong Wang¹, Vignesh Jagadeesh³, Bryan Ressler³, and Robinson Piramuthu³; ¹University of Delaware and ²eBay Research Labs (USA)

11:30 3DIPM-046
Human detection from still depth images, Gulsum Can and Helin Dutagaci, Eskisehir Osmangazi University (Turkey)

11:50 IPAS-047
Tracking the guitarist's fingers as well as recognizing pressed chords from a video sequence, Zhao Wang and Jun Ohya, Waseda University (Japan)

12:10 – 2:00 pm Lunch Break

3DIPM/IMSE: Image Sensors and Systems for 3D Imaging Joint Session

Session Chair: William Puech, University of Montpellier (France)

1:50 – 3:20 pm

Golden Gate 6/7

This session is jointly sponsored by: Image Sensors and Imaging Systems 2016, and 3D Image Processing, Measurement (3DIPM), and Applications 2016.

1:50**Joint conference introduction**2:00 IMSE-048

A time-of-flight CMOS range image sensor using 4-tap output pixels with lateral-electric-field control, Taichi Kasugai¹, Sang-Man Han¹, Hanh Trang¹, Taishi Takasawa¹, Satoshi Aoyama², Keita Yasutomi¹, Keiichiro Kagawa¹, and Shoji Kawahito¹; ¹Shizuoka University and ²Brookman Technology (Japan)

2:20 IMSE-049

Design, implementation and evaluation of a TOF range image sensor using multi-tap lock-in pixels with cascaded charge draining and modulating gates, Trang Nguyen¹, Taichi Kasugai¹, Keigo Isobe², Sang-Man Han¹, Taishi Takasawa¹, De Xing Lioe¹, Keita Yasutomi¹, Keiichiro Kagawa¹, and Shoji Kawahito¹; ¹Shizuoka University and ²Brookman Technology (Japan)

2:40 3DIPM-050

Markerless motion capture with multi-view structured light, Ricardo Garcia and Avidah Zakhor, University of California, Berkeley (USA)

3:00

3DIPM-051

Towards automated, high resolution 3D scanning of large surfaces for cultural heritage documentation, Robert Sitnik¹, Eryk Bunsch², Grzegorz Maczkowski¹, Wojciech Zaluski¹, Krzysztof Lech¹, Jakub Michonski¹, , Jakub Krzesłowski¹, and Piotr Foryś¹, ¹Warsaw University of Technology and ²Museum of King Jan III's Palace at Wilanów (Poland)

3:20 – 3:50 pm Coffee Break

3D Industrial Applications

Session Chair: William Puech, University of Montpellier (France)

3:50 – 5:00 pm

Golden Gate 6/7

3:50 3DIPM-409

Mobile version of Digital Image Correlation for deformation measurements of engineering objects, Marcin Malesa, Dariusz Napłoszek, Krzysztof Kuczynski, and Pawel Skrzypczak, ¹Warsaw University of Technology (Poland)

4:10 3DIPM-410

Structural internal deterioration detection with motion vector field image analysis using monocular camera, Hiroshi Imai, Masahiko Ohta, and Kazuhito Murata, NEC Corporation (Japan)

4:50**Closing Remarks**