

IS&T International Symposium on

Electronic Imaging

SCIENCE AND TECHNOLOGY

29 January 2017 – 2 February 2017 • Burlingame, CA, USA

PROCEEDINGS

Visual Information Processing and Communication VIII

Editors: Edward Delp, Purdue Univ. (United States),
Robert L. Stevenson, Univ. of Notre Dame (United States)

These papers represent the program of Electronic Imaging 2017,
held January 29 – February 2, 2017, at the Hyatt Regency San Francisco Airport in Burlingame, CA.

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ISSN 2470-1173
<https://doi.org/10.2352/ISSN.2470-1173.2017.2.VIPC-A>
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Visual Information Processing and Communication VIII

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Visual Information Processing and Communication VIII

Monday, January 30, 2017

Image and Video Compression

10:50 am – 12:30 pm

Cypress A

10:50

A fast TU mode decision algorithm based on residual difference for HEVC, Nian-Rong Li¹, Kai-Wen Liang¹, Zong-Yi Chen¹, Hui-Yu Jiang¹, Jiunn-Tsair Fang², and Pao-Chi Chang¹; ¹National Central University and ²Ming Chuan University (Taiwan) [VIPC-398]

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11:10

A fast intra mode decision algorithm for HEVC, Weihang Liao, Daiqin Yang, and Zhenzhong Chen, Wuhan University (China) [VIPC-399]

10

11:30

Diamond frequency domain inter frame motion estimation for HEVC, Abdelrahman Abdelazim¹, Ahmed Hamza², Mohamed Hefaida¹, and Djamel Ait-Boudaoud²; ¹The American University of the Middle East (Kuwait) and ²University of Portsmouth (United Kingdom) [VIPC-400]

16

11:50

Compression of infrared images, Claire Mantel and Søren Forchhammer, Denmark Technical University (Denmark) [VIPC-401]

21

12:10

Graph regularized sparse coding by modified online dictionary learning, Lingdao Sha, Dan Schonfeld, and Jing Wang, University of Illinois at Chicago (United States) [VIPC-402]

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12:30 – 2:00 pm Lunch Break

El 2017 Opening Plenary and Symposium Awards

Session Chairs: Joyce E. Farrell, Stanford University, and Nitin Sampat, Rochester Institute of Technology (United States)

2:00 – 3:00 pm

Grand Peninsula Ballroom D

Giga-scale 3D computational microscopy, Laura Waller, University of California, Berkeley (United States)

Laura Waller is the Ted Van Duzer Endowed Assistant Professor of Electrical Engineering and Computer Sciences (EECS) at UC Berkeley. She is a Senior Fellow at the Berkeley Institute of Data Science, and received her BS (2004), MEng (2005), and PhD (2010) in EECS from the Massachusetts Institute of Technology (MIT). Waller's talk is on computational imaging methods for fast capture of gigapixel-scale 3D intensity and phase images in a commercial microscope that employs illumination-side and detection-side coding of angle (Fourier) space with simple hardware and fast acquisition. The result is high-resolution reconstructions across a large field-of-view, achieving high space-bandwidth-time product.

3:00 – 3:30 pm Coffee Break

Segmentation

3:30 – 4:30 pm

Cypress A

3:30

A coarse-to-fine framework for video object segmentation, Chi Zhang¹ and Alexander Loui²; ¹Rochester Institute of Technology and ²Kodak Alaris Inc. (United States) [VIPC-403]

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3:50

A fast and accurate segmentation method for medical images, Jiatao Wu¹, Yong Li¹, Yun Peng², and Chunxiao Fan¹; ¹Beijing University of Posts and Telecommunications and ²Beijing Children's Hospital, Capital Medical University (China) [VIPC-404]

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4:10

Adaptive combination of local motion, appearance, and shape for video segmentation (JIST-first), Woo-sung Shim¹, Se-hoon Kim¹, and Soochahn Lee²; ¹Samsung Electronics Co., Ltd, and ²Soonchunhyang University (Republic of Korea) [VIPC-405]

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Symposium Welcome Reception

5:00 – 6:00 pm

Atrium

Tuesday, January 31, 2017

Techniques for Image and Video Processing

8:50 – 10:10 am

Cypress A

8:50

Improvement of infrared image based on directional anisotropic wavelet transform, Hongbin Jin¹, Chunxiao Fan¹, Quanyong Wang², and Yong Li¹; ¹Beijing University of Posts and Telecommunications and ²Ultimedical, Inc (China) [VIPC-406]

51

9:10

Improved diamond half-pel hexagon search algorithm for block-matching motion estimation, Abdelrahman Abdelazim¹, Ahmed Hamza², Bassam Noaman¹, and Djamel Ait-Boudaoud²; ¹The American University of the Middle East (Kuwait) and ²University of Portsmouth (United Kingdom) [VIPC-407]

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9:30

Self-example-based edge enhancement algorithm for around view monitor images, Dong Yoon Choi¹, Ji Hoon Choi¹, Jin Wook Choi², and Byung Cheol Song¹; ¹Inha University and ²Hyundai Motor Company (Republic of Korea) [VIPC-408]

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9:50

Adaptive multi-reference prediction using a symmetric framework, Zoe Liu¹, Debargha Mukherjee¹, Wei-Ting Lin², Paul Wilkins¹, Jingning Han¹, and Yaowu Xu¹; ¹Google Inc. and ²University of California, Santa Barbara (United States) [VIPC-409]

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10:00 am – 7:30 pm Industry Exhibition

10:10 – 10:50 am Coffee Break

Databases and Classification

10:50 – 11:30 am

Cypress A

10:50 73

Semi-supervised learning feature representation for historical Chinese character recognition, Xiaoyi Yu, Wei Fan, Jun Sun, and Satoshi Naoi, Fujitsu R&D Co. Limited (China) [VIPC-411] [Proceedings Only]

11:10 78

Document image classification on the basis of layout information, Sergey Zavalishin¹, Andrey Bout², Ilya Kurilin¹, and Michael Rychagov¹; ¹Samsung R&D Institute Russia and ²Kaspersky Lab (Russian Federation) [VIPC-412]

11:30 am – 2:00 pm Lunch Break

EI 2017 Tuesday Plenary and Symposium Awards

Session Chairs: Joyce E. Farrell, Stanford University, and Nitin Sampat, Rochester Institute of Technology (United States)

2:00 – 3:00 pm

Grand Peninsula Ballroom D

VR 2.0: Making virtual reality better than reality, Gordon Wetzstein, Stanford University (United States)

Gordon Wetzstein is an Assistant Professor of Electrical Engineering and, by courtesy, of Computer Science, at Stanford University, and leads the Stanford Computational Imaging Group. He received a PhD in computer science from the University of British Columbia (2011) where his doctoral dissertation focused on computational light modulation for image acquisition and display. In his talk, Wetzstein explores the frontiers of VR systems engineering. Eventually, VR/AR systems will redefine communication, entertainment, education, collaborative work, simulation, training, telesurgery, and basic vision research, as next-generation computational near-eye displays evolve to deliver visual experiences that are better than the real world.

3:00 – 3:30 pm Coffee Break

Symposium Demonstration Session

5:30 – 7:30 pm

Grand Peninsula Ballroom E