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# Electronic Imaging

SCIENCE AND TECHNOLOGY

14–18 February 2016 • San Francisco, CA, USA

PROCEEDINGS

## Visual Information Processing and Communication VII

Editors: **Onur G. Guleryuz,** LG Electronics MobileComm U.S.A., Inc. (USA); **Amir Said,** Qualcomm Technologies Inc. (USA); and **Robert L. Stevenson,** Univ. of Notre Dame (USA)

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# Visual Information Processing and Communication VII

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## Visual Information Processing and Communication VII

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**Amir Said,** Qualcomm Technologies Inc. (USA)
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# Wednesday, February 17, 2016

## DPMI/IPAS/VIPC: Blur Removal and Synthesis Joint Session

Session Chair: Radka Tezaur, Nikon Research Corp. of America (USA)

**10:50 am – 12:10 pm**
Golden Gate 6/7

This session is jointly sponsored by: Digital Photography and Mobile Imaging XII, Image Processing: Algorithms and Systems XIV, and Visual Information Processing and Communication VII.

10:50 DPMI-030
**Multi-image sparse motion-invariant photography,** *Bart Kofoed[1,2], Peter de With[1], and Eric Janssen[2]; [1]Eindhoven University of Technology and [2]Prodrive Technologies (Netherlands)*

11:10 DPMI-031
**Virtual DSLR: High quality dynamic depth-of-field synthesis on mobile platforms,** *Yang Yang[1], Haiting Lin[1], Zhan Yu[2], Sylvain Paris[2], and Jingyi Yu[1]; [1]University of Delaware and [2]Adobe (USA)*

11:50 VIPC-033
**Motion deblurring for depth-varying scenes,** *Ruiwen Zhen and Robert Stevenson, University of Notre Dame (USA)*

12:10 – 2:00 pm Lunch Break

**EI 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

## Image Enhancement and Analysis

Session Chair: Robert Stevenson, University of Notre Dame (USA)

**3:30 – 4:50 pm**
Golden Gate 2

3:30 VIPC-227
**Sony ARW2 compression: Artifacts and credible repair,** *Henry Dietz, University of Kentucky (USA)*

3:50 VIPC-228
**Guided filter demosaicking for Fourier spectral filter array,** *Jie Jia, Chuan Ni, Andrew Sarangan, and Keigo Hirakawa, University of Dayton (USA)*

4:10 VIPC-229
**Haze removal of single remote sensing image by combining dark channel prior with superpixel,** *Yanlin Tian, Chao Xiao, Xiu Chen, Daiqin Yang, and Zhenzhong Chen, Wuhan University (China)*

4:30 VIPC-230
**Towards region-of-attention analysis in eye tracking protocols,** *Yingbin Wang Wang, Xiu Chen, and Zhenzhong Chen, Wuhan University (China)*

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## Image Databases

Session Chair: Robert Stevenson, University of Notre Dame (USA)

**4:50 – 5:30 pm**
Golden Gate 2

4:50 VIPC-231
**Using deep convolutional neural networks for image retrieval,** *Chien-Hao Kuo[1], Yang-Ho Chou[2], and Pao-Chi Chang[1]; [1]Department of Communication Engineering, National Central University and [2]Convergence Services Laboratory, Chunghwa Telecommunication Laboratories (Taiwan)*

5:10 VIPC-232
**Visual attention model and relevant feedback based image retrieval,** *Zhijiang Li[1,2], Jiaxian Long[1], and Chuan Dong[3]; [1]Wuhan University (China), [2]University of Leeds (United Kingdom), and [3]Hubei Mobile Communication Company Limited (China)*

**EI 2016 Symposium Interactive Papers Session**
**5:30 – 7:00 PM**
Continental Ballroom 6

# Thursday, February 18, 2016

## Error Resilient Video Coding

Session Chairs: Onur Guleryuz, LG Electronics MobileComm U.S.A., Inc. (USA) and Amir Said, Qualcomm Technologies Inc. (USA)

**9:30 – 10:10 am**
Golden Gate 2

9:30 VIPC-233
**A doubly error resilient coder of image sequences,** *William A. Pearlman and Yang Hu, PrimaComp, Inc. (USA)*

9:50 VIPC-234
**VPx Error Resilient Video Coding Using Duplicated Prediction Information,** *Neeraj Gadgil and Edward Delp, Purdue University (USA)*

10:10 – 10:50 am Coffee Break

## Video Coding

Session Chairs: Onur Guleryuz, LG Electronics MobileComm U.S.A., Inc. (USA) and Amir Said, Qualcomm Technologies Inc. (USA)

**10:50 am – 12:30 pm**
Golden Gate 2

10:50 VIPC-235
**A subjective study for the design of multi-resolution ABR video streams with the VP9 Codec,** *Chao Chen, Sasi Inguva, Andrew Rankin, and Anil Kokaram, YouTube, Google Inc. (USA)*

11:10 VIPC-236
**Machine learning-based early termination in prediction block decomposition for VP9,** *Xintong Han[1], Yunqing Wang[2], Yaowu Xu[2], and James Bankoski[2]; [1]University of Maryland, College Park and [2]Google Inc. (USA)*

11:30 VIPC-237
**Optimizing transcoder quality targets using a neural network with an embedded bitrate model,** *Michele Covell[1], Martin Arjovsky[2], Yao-Chung Lin[1], and Anil Kokaram[1]; [1]Google, Inc (USA) and [2]University of Buenos Aires (Argentina)*

11:50 VIPC-238
**A sample adaptive offset early termination method for HEVC parallel encoding,** *Younhee Kim, Jinwuk Seok, Myeong-Seok Gi, Huiyong Kim, and Jin Soo Choi, Electronics and Telecommunication Research Institute (South Korea)*

12:10 VIPC-239
**Pixel decimation of RD-cost functions in the HEVC encoder,** *Ahmed Hamza[1], Abdelrahman Abdelazim[2], and Djamel Ait-Boudaoud[1]; [1]University of Portsmouth (United Kingdom) and [2]American University of the Middle East (Kuwait)*

12:30 – 150 pm Lunch Break

## Feature Detection

Session Chair: Robert Stevenson, University of Notre Dame (USA)

**1:50 – 3:30 pm**
Golden Gate 2

1:50 VIPC-240
**Block equivalence algorithm for labeling 2D and 3D images on GPU,** *Sergey Zavalishin[1], Ilia Safonov[2], Yury Bekhtin[3], and Ilya Kurilin[4]; [1]Ryazan State Radio Electronics University (RSREU), [2]National Research Nuclear University MEPhI, [3]Moscow State Technical University of Radio Engineering, Electronics and Automatics, and [4]Samsung R&D Institute Russia (Russian Federation)*

2:10 VIPC-241
**Incorporating gradient magnitude in computation of Edge Oriented Histogram descriptor,** *Liangpeng Xu, Yong Li, Chunxiao Fan, Hongbin Jin and Xiang Shi, Beijing University of Posts and Telecommunications (China)*

2:30 VIPC-242
**Fingerprint liveness detection using ensemble of local image quality assessments,** *Wonjun Kim, Sungjoo Suh, Youngsung Kim, and Changkyu Choi, Samsung Advanced Institute of Technology (South Korea)*

2:50 VIPC-243
**Optimizing color information processing inside an SVM network,** *Jérôme Pasquet[1,2], Gérard Subsol[2], Mustapha Derras[1], and Marc Chaumont[2,3]; [1]Berger Levrault, [2]Université de Montpellier/CNRS, and [3]Université de Nîmes (France)*

3:10 VIPC-244
**Register multimodal images of large scene depth variation with global information,** *Hongbin Jin[1], Yong Li[1], and Robert Stevenson[2]; [1]Beijing University of Posts and Teles. (China) and [2]University of Notre Dame (USA)*

3:30 – 3:50 pm Coffee Break