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Imaging and Multimedia Analytics in a Web and Mobile World 2018

Editors: **Jan P. Allebach,** Purdue Univ. (United States),
Zhigang Fan, Apple Inc. (United States),
Qian Lin, Hp Labs, Hp Inc. (United States)

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Imaging and Multimedia Analytics in a Web and Mobile World 2018

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Imaging and Multimedia Analytics in a Web and Mobile World 2018

Wednesday, January 31, 2018

Keynote: Deep Learning for Recognition and Detection I
Session Chair: Qian Lin, HP Labs, HP Inc. (United States)
9:10 – 10:10 am
Harbour A-B

IMAWM-310 [no paper]
How does building a low cost vision sensor teach us about deep learning?, *Tianli Yu, Morpx Inc. (United States)*

Dr. Tianli Yu is the CEO and co-founder of Morpx Inc., a startup based in Hangzhou that delivers innovative computer vision hardware and software. He received his PhD in ECE from the University of Illinois at Urbana Champaign (2006). After graduation, he's been a senior computer vision researcher in Motorola Labs working on the embedded stereo depth camera for Motorola's phones. Later, Dr. Yu joined like.com and designed algorithms to assist shoppers in finding their personal styles. Like.com was eventually acquired by Google in 2010. After working for a few years in the design of large scale visual search and recognition algorithms for Google Shopping, Dr. Yu founded Morpx with his friend Frank Ran in late 2013. Morpx is the second time in his career that he is working to build an ultra-compact and super energy efficient computer vision system.

10:00 am – 4:00 pm Industry Exhibition

10:10 – 10:50 am Coffee Break

Deep Learning for Recognition and Detection II

Session Chair: Jane You, The Hong Kong Polytechnic University (Hong Kong)

10:50 AM – 12:30 pm
Harbour A-B

10:50 IMAWM-336
Depth and superpixel extraction for augmenting human detection (Invited), *Hussin Ragb, Theus Aspiras, and Vijayan Asari, University of Dayton (United States)*

11:30 IMAWM-467
Vision based vehicle re-identification by fusion of multiple features, *Geng Yang[1], Jane You[2], Zhenhua Guo[3], and Qin Li[4]; [1]Shenzhen Genvict Technologies Co., Ltd. (China), [2]The Hong Kong Polytechnic University (Hong Kong), [3]Tsinghua University Shenzhen Graduate School (China), and [4]Shenzhen Institute of Information Technology (China)*

11:50 IMAWM-338
Hierarchical Auto-associative Polynomial Convolutional Neural Network (HAP-CNN), *Patrick Martell and Vijayan Asari, University of Dayton Research Institute (United States)*

12:10 IMAWM-339
Learn a hybrid collaborative representation for fine-grained image classification, *Wen-Yang Xie[1], Bao-Di Liu[1], Xue Li[2], and Yan-Jiang Wang[1]; [1]China University of Petroleum (China) and [2]Tsinghua University (China)*

12:30 – 2:00 pm Lunch

Plenary Session

2:00 – 3:00 pm
Grand Peninsula Ballroom D

Ubiquitous, Consumer AR Systems to Supplant Smartphones, *Ronald T. Azuma, Intel, Corp. (United States)*

Dr. Ronald T. Azuma, researcher and augmented reality pioneer, shares his vision for achieving ubiquitous, consumer AR systems. Recent large investments in augmented reality reflect the commercial interest in its inherent potential to replace current smartphone technology, but much remains to be done. In his talk, Dr. Azuma gives a vision for achieving this goal, which requires not just solving numerous technical challenges but also determining new, compelling AR experiences that will establish AR as a new platform and novel form of media.

Dr. Azuma leads a team in Intel Labs that designs and prototypes novel experiences and key enabling technologies to enable new forms of media. These technology areas include computational imaging and photography, computational displays, and head-worn displays. Dr. Azuma is recognized as a pioneer and innovator in augmented reality, and has held prominent leadership roles in that research area, including leading and implementing research projects and demonstrations in areas such as AR, visualization, and mobile applications. Dr. Azuma received his BSc (1988) in electrical engineering from University of California, Berkeley, and MS (1990) and PhD (1995) in computer science from University of North Carolina, Chapel Hill. Prior to joining Intel, he was a research leader at Nokia Research Center Hollywood, and a senior researcher at Hughes Research Laboratories.

3:00 – 3:30 pm Coffee Break

Deep Learning for Face Recognition

3:30 – 5:10 PM
Harbour A-B

3:30 IMAWM-372 [no paper]
One-shot face recognition: A review (Invited), *Yandong Guo and Lei Zhang, Microsoft Research (United States)*

4:10 IMAWM-373
Face liveness detection based on joint analysis of RGB and near-infrared image of faces, *Lingxue Song and Changsong Liu, Tsinghua University (China)*

4:30 IMAWM-374
Robust convolutional neural network cascade for facial landmark localization exploiting training data augmentation, *Ruiyi Mao[1], Qian Lin[2], and Jan Allebach[1]; [1]Purdue University and [2]HP Labs, HP Inc. (United States)*

4:50 IMAWM-421
Empirical study of image compression for palm vein recognition, *Zhenhua Guo[1], Qin Li[2], Yujiu Yang[1], and Jane You[3]; [1]Tsinghua University (China), [2]Shenzhen Institute & Information Techology (China), and [3]The Hong Kong Polytechnic University (Hong Kong)*

IMAWM

Symposium Interactive Papers (Poster) Session

5:30 – 7:30 pm
The Grove

Meet the Future: A Showcase of Student and Young Professionals Research

5:30 – 7:30 pm
The Grove

Thursday, February 1, 2018

Deep Learning for Recognition and Detection III

Session Chair: Zhigang Fan, Apple Inc. (United States)

9:10 – 10:10 AM
Harbour A-B

9:10 IMAWM-419
3D Shape retrieval using volumetric and image CNNs: A meta-algorithmic approach, *Ruiting Shao[1], Yang Lei[2], Jian Fan[2], and Jerry Liu[2]; [1]Purdue University and [2]HP Labs, HP Inc. (United States)*

9:30 IMAWM-420 [no paper]
A new fast template matching algorithm for object detection, *Jichao Jiao[1], Weihua Tang[2], Xin Wang[1], and Zhongliang Deng[1]; [1]Beijing University of Posts and Telecommunications and [2]China State Construction Engineering Corporation (China)*

9:50 IMAWM-375
A feature fusion strategy for human detection in omnidirectional camera imagery, *Hussin Ragb and Vijayan Asari, University of Dayton (United States)*

10:10 – 10:50 AM Coffee Break

Multimedia Analytics in Online Systems

10:50 am – 12:30 pm
Harbour A-B

10:50 IMAWM-443 [no paper]
Has mobile photography changed the users' behavior while ordering printed products? (Invited), *Reiner Fageth, CEWE Stiftung & Co. KGAA (Germany)*

11:30 IMAWM-444
Application of natural language processing to an online fashion marketplace, *Kendal Norman[1], Zhi Li[1], Young-Taek Oh[1], Gautam Golwala[2], Sathya Sundaram[2], and Jan Allebach[1]; [1]Purdue University and [2]Poshmark Inc. (United States)*

11:50 IMAWM-445
Multimedia analytics platform for profiling keywords embedded in photo catalogues, *Federica Mangiatordi, Andrea Bernardini, Emiliano Pallotti, and Licia Capodiferro, Fondazione Ugo Bordoni (Italy)*

12:10 IMAWM-446
Use of color information in the analysis of fashion photographs, *Zhi Li[1], Gautam Golwala[2], Sathya Sundaram[2], and Jan Allebach[1]; [1]Purdue University and [2]Poshmark Inc. (United States)*

12:30 – 2:00 pm Lunch

Mobile Image Analytics and Augmented Reality

2:00 – 3:20 pm
Harbour A-B

2:00 IMAWM-453
Semantic pose machines (Invited), *Ying-Kai Huang and Andreas Savakis, Rochester Institute of Technology (United States)*

2:40 IMAWM-454
Learning enhancement with mobile augmented reality, *Xunyu Pan, Joseph Shipway, and Wenjuan Xu, Frostburg State University (United States)*

3:00 IMAWM-455
Person segmentation using convolutional neural networks with dilated convolutions, *David Ho[1] and Qian Lin[2]; [1]Purdue University and [2]HP Labs, HP Inc. (United States)*

3:20 – 3:50 pm Coffee Break

Multi-Media Object Detection

Session Chair: Jan Allebach, Purdue University (United States)

3:50 – 4:50 pm
Harbour A-B

3:50 IMAWM-466
Deep learning for moving object detection and tracking from a single camera in unmanned aerial vechicles (UAVs) (Invited), *Dong Hye Ye, Jing Li, Qiulin Chen, Juan Wachs, and Charles Bouman, Purdue University (United States)*

4:30 IMAWM-337
Logo detection and recognition with synthetic images, *Daniel Mas Montserrat[1], Qian Lin[2], Jan Allebach[1], and Edward Delp[1]; [1]Purdue University and [2]HP Labs, HP Inc. (United States)*