2016 IEEE International Conference on Computational Photography (ICCP 2016)

Evanston, Illinois, USA
13 – 15 May 2016
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Program

Morning Session - Norris University Center - Friday, 13 May 2016

8:30 - 9:30  Breakfast/Registration

9:30 - 9:40  Welcome

9:40 - 10:40 Session 1 - 3 talks (15 minute talk + 5 minute Q&A)

  3D Reconstruction of Mirror-type Objects using Efficient Ray Coding .... 1
  Siu-Kei Tin, Jinwei Ye, Mahdi Nezamabadi, Can Chen

  Invited Talk: The 3D Motion Picture Camera - About Single-Shot, High Resolution 3D-Imaging
  Florian Wullitzer (University of Erlangen-Nuremberg)

  Correcting Perceived Perspective Distortions Using Object Specific Planar Transformations .... 12
  Mahdi Abbaspour Tehrani, Aditi Majumder, M. Gopi

10:40 - 11:00  Coffee Break

11:00 - 12:00  Keynote 1

  Computational Imaging of Cultural Heritage
  Marc Walton (NU-ACCESS)

12:00 - 1:30  Lunch

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Afternoon Session - Norris University Center - Friday, 13 May 2016

1:30 - 2:30  Session 2 - 3 talks (15 minute talk + 5 minute Q&A)

Invited Talk: Seeing “More” with Clarity using Patterned Illumination
Prasanna Rangarajan (Southern Methodist University)

In-Situ Multi-View Multi-Scattering Stochastic Tomography
Vadim Holodovsky, Yoav Y. Schechner, Anat Levin, Aviad Levis, Amit Aides

Invited Talk: Super-resolution Interpolation using Library Based Plug & Play Priors
Charles Bouman (Purdue University)

2:30 - 3:30  Keynote 2

IceCube and the Discovery of High-Energy Cosmic Neutrinos
Francis Halzen (IceCube, University of Wisconsin-Madison)

3:30 - 3:45  Coffee Break

3:45 - 4:45  Session 3 - 3 talks (15 minute talk + 5 minute Q&A)

Blind Dehazing using Internal Patch Recurrence
Yuval Bahat, Michal Irani

Learning Joint Demosaicing and Denoising Based on Sequential Energy Minimization
Teresa Klatzer, Kerstin Hammernik, Patrick Knobelreiter, Thomas Pock

Invited Talk: Advances in Computational Microscopy are Facilitating Accurate Screening Techniques for Multiple Early-Stage Human Cancers
Allen Taflove (Northwestern University)

5:30 - 10:30  Reception - Anita Dee Charters Dinner Yacht Cruise

Morning Session - Harris Building - Saturday, 14 May 2016

8:30 - 9:30  Breakfast

9:30 - 10:30  Session 4 - 3 talks (15 minute talk + 5 minute Q&A)

4D Light Field Segmentation with Spatial and Angular Consistencies
Hajime Mihara, Takuya Funatomi, Kenichiro Tanaka, Hiroyuki Kubo, Hajime Nagahara, Yasuhiro Mukaigawa

Fast, High Dynamic Range Light Field Processing for Pattern Recognition
Scott McCloskey, Ben Miller

Invited Talk: High-speed High-dimensional Imaging with Light Field Microscopy
Qionghai Dai (Tsinghua University)
Morning Session (cont.) - Harris Building - Saturday, 14 May 2016

10:30 - 10:45  Coffee Break

10:45 - 11:45  Keynote 3

Computational Microscopy, Sensing and Diagnostics
Aydogan Ozcan (University of California, Los Angeles)

11:45 - 12:45  Session 5 - 3 talks (15 minute talk + 5 minute Q&A)

A Picture is Worth a Billion Bits: Real-time Image Reconstruction from Dense Binary Threshold Pixels ............................................................ 72
Tal Remez, Or Litany, Alex Bronstein

High-Speed Imaging using CMOS Image Sensor with Quasi Pixel-Wise Exposure 81
Toshiki Sonoda, Hajime Nagahara, Kenta Endo, Yukinobu Sugiyama, Rin-ichiro Taniguchi

Invited Talk: Nanoscale Imaging With X-Rays and Computation
Chris Jacobsen (Argonne National Labs, Northwestern University)

12:45 - 2:00  Lunch - Parkes Building

Afternoon Session - Harris Building - Saturday, 14 May 2016

2:00 - 3:00  Keynote 4

Computational Imaging: How Much Imaging - How Much Computation?
Gerd Häusler (University of Erlangen-Nuremberg)

3:00 - 4:00  Session 6 - 3 talks (15 minute talk + 5 minute Q&A)

Towards Flexible Sheet Cameras: Deformable Lens Arrays with Intrinsic Optical Adaptation ................................................................. 92
Daniel C. Sims, Yonghao Yue, Shree K. Nayar

Sensor-level Privacy for Thermal Cameras .................................................. 103
Francesco Pittaluga, Aleksandar Zivkovic, Sanjeev J. Koppal

Invited Talk: Highly Sensitive 2D and 3D Imaging in the Infrared
Hooman Mohseni (Northwestern University)

4:00 - 7:00  Poster Session (68 posters and demos) - Hardin Hall

9:00 - 11:00  Dearborn Observatory Tour - Dearborn Observatory
Morning Session - Harris Building - Sunday, 15 May 2016

8:30 - 9:30   Breakfast

9:30 - 10:30  Session 7 - 3 talks (15 minute talk + 5 minute Q&A)

Do-It-Yourself Lighting Design for Product Videography .......................... 115
Ivaylo Boyadzhiev, Jiawen Chen, Sylvain Paris, Kavita Bala

White Balance under Mixed Illumination using Flash Photography ........... 124
Zhuo Hui, Aswin C. Sankaranarayanan, Kalyan Sunkavalli, Sunil Hadap

Invited Talk: Enabling Unconventional Imaging Pipelines through Physical Simulation
Matthias Hullin (University of Bonn)

10:30 - 10:45  Coffee Break

10:45 - 11:45  Keynote 5

Relighting Pictures
David Forsyth (University of Illinois at Urbana-Champaign)

11:45 - 12:45  Session 8 - 3 talks (15 minute talk + 5 minute Q&A)

Single-Shot Diffuser-Encoded Light Field Imaging ................................. 134
Nicholas Antipa, Sylvia Necula, Ren Ng, Laura Waller

Passive Light and Viewpoint Sensitive Display of 3D Content .................. 145
Anat Levin, Haggai Maron, Michal Yarom

Invited Talk: Computational Microscopy
Laura Waller (UC Berkeley)

12:45 - 1:45   Lunch - Parkes Building

Afternoon Session - Harris Building - Sunday, 15 May 2016

1:45 - 2:45   Session 9 - 3 talks (15 minute talk + 5 minute Q&A)

Shape and Reflectance from Two-Bounce Light Transients ................... 160
Chia-Yin Tsai, Ashok Veeraraghavan, Aswin C. Sankaranarayanan

Occlusion-Robust 3D Sensing Using Aerial Imaging ............................... 170
Masahiko Yasui, Yoshihiro Watanabe, Masatoshi Ishikawa

Invited Talk: APERTURE, A Large Space Telescope Using Magnetostriiction For Post Deployment Corrections
Mel Ulmer (Northwestern University)

2:45 - 3:00   Awards Announcement and Closing Remarks