

2017 IEEE International Conference on Computational Photography (ICCP 2017)

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Table of Contents

Program	iv
Message from the Chairs	viii
Host Institution	ix
Chairs	ix
Steering Committee	ix
Program Committee	x
Sponsors	xi
Keynote Speakers	xii

Program

Morning Session - Jen-Hsun Huang Center - MacKenzie Rm. - May 12

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)**

TCI Talk: Photon-Efficient Computational 3-D and Reflectivity Imaging With Single-Photon Detectors
Vivek Goyal (Boston University)

Reconstructing Rooms Using Photon Echoes: A Plane based model and reconstruction algorithm for looking around the corner 1
Adithya K. Pediredla, Mauro Buttafava, Alberto Tosi, Oliver Cossairt, Ashok Veeraraghavan

Computational Multispectral Flash 13
Henryk Blasinski, Joyce Farrell

10:40 - 11:00 **Coffee Break**

11:00 - 12:00 **Keynote 1**

Nature's gift: how the discovery of structural principles in a microbial protein helped illuminate the pathophysiology of psychiatry
Karl Deisseroth (Stanford University)

12:00 - 1:30 **Lunch**

Afternoon Session - Jen-Hsun Huang Center - MacKenzie Rm. - May 12

- 1:30 - 2:30** **Session 2 - 3 talks (15 minute talk + 5 minute Q&A)**
- Fast Non-blind Deconvolution via Regularized Residual Networks with Long/Short Skip-Connections 23
Hyeongseok Son, Seungyong Lee
- Multiscale Gigapixel Video: A Cross Resolution Image Matching and Warping Approach 33
Xiaoyun Yuan, Lu Fang, Qionghai Dai, David Brady, Yebin Liu
- TCI Talk:** RAISR: Rapid and accurate Image Super Resolution
Peyman Milanfar (Google)
- 2:30 - 3:30** **Session 3 - 3 talks (15 minute talk + 5 minute Q&A)**
- Invited Talk:** OpenCV 3.0, from geometric vision to deep learning, and some notes on applications from Arraiy.com
Gary Bradski (Arraiy)
- Invited Talk:** Single shot high dynamic range imaging using convolutional sparse coding
Belen Masia (Universidad de Zaragoza)
- Compressive spectral anomaly detection 42
Vishwanath Saragadam, Jian Wang, Xin Li, Aswin Sankaranarayanan
- 3:30 - 4:30** **Coffee Break**
- 4:30 - 5:30** **Session 4 - 3 talks (15 minute talk + 5 minute Q&A)**
- Invited Talk:** Inverse design and implementation of optical structures
Jelena Vukovic (Stanford University)
- TCI Talk:** FlatCam: Thin, Lensless Cameras using Coded Aperture and Computation
Salman Asif (University of California, Riverside)
- Invited Talk:** SeeInTheDark: Extreme Imaging using Cell Phones
Marc Levoy (Google)
- 6:30 - 10:00** **Reception - Cantor Art Center, Stanford University**

Morning Session - Jen-Hsun Huang Center - MacKenzie Rm. - May 13

- 8:30 - 9:30** **Breakfast**
- 9:30 - 10:30** **Session 1 - 3 talks (15 minute talk + 5 minute Q&A)**
- Invited Talk:** Waves, optical coherence and phase space
Miguel Alonso (University of Rochester)

Invited Talk: Computational Imaging by Phase Retrieval
Jim Fienup (University of Rochester)

Coherent Inverse Scattering via Transmission Matrices: Efficient Phase Retrieval Algorithms and a Public Dataset 51
Christopher Metzler, Manoj Sharma, Sudarshan Nagesh, Richard Baraniuk, Oliver Cossairt, Ashok Veeraraghavan

10:30 - 11:00 Coffee Break

11:00 - 12:00 Keynote 2

Computational Illumination for Photoreal Digital Actors
Paul Debevec (USC / Google)

12:00 - 1:30 Lunch

Afternoon Session - Jen-Hsun Huang Center - MacKenzie Rm. - May 13

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

The Light Field 3D Scanner 67
Yingliang Zhang, Zhong Li, Wei Yang, Peihong Yu, Haiting Lin, Jingyi Yu

Invited Talk: Light field otoscope for 3D in vivo imaging of the middle ear
Ivana Tomic

Lensless Light-field Imaging with Multi-phased Fresnel Zone Aperture 76
Kazuyuki Tajima, Takeshi Shimano, Yusuke Nakamura, Mayu Sao, Taku Hoshizawa

2:30 - 3:30 Panel - Starting up a computational photography business

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

Invited Talk: Computational microscopy of optically thick samples
Chrysanthe Preza (University of Memphis)

Aperture interference and the volumetric resolution of light field fluorescence microscopy 83
Isaac Kauvar, Julie Chang, Gordon Wetzstein

TCI Talk: Nonlinear Optimization Algorithm for Partially Coherent Phase Retrieval and Source Recovery
Lei Tian (Boston University)

4:30 - 7:00 Poster & demo session with drinks and hors d'oeuvres

Jen-Hsun Huang Engineering Center - Basement

7:00 - late Optional conference social, drinks and dinner on your own

“The Patio”, 412 Emerson St., Palo Alto, CA 94301

Morning Session - Jen-Hsun Huang Center - MacKenzie Rm. - May 14

8:30 - 9:30 **Breakfast**

9:30 - 10:30 **Session 1 - 3 talks (15 minute talk + 5 minute Q&A)**

Reading Between the Pixels: Photographic Steganography for Camera Display
Messaging 95
Eric Wengrowski, Kristin J. Dana, Marco Gruteser, Narayan Mandayam

Invited Talk: Understanding and Synthesizing Pixels with Deep Neural Networks
Alyosha Efros (UC Berkeley)

Real-Time Panoramic Tracking for Event Cameras 106
Christian Reinbacher, Gottfried Munda, Thomas Pock

10:30 - 11:00 **Coffee Break**

11:00 - 12:00 **Keynote 3**

RGB+: Near-Infrared in Computational Photography
Sabine Susstrunk (EPFL)

12:00 - 1:30 **Lunch**

Afternoon Session - Jen-Hsun Huang Center - MacKenzie Rm. - May 14

1:30 - 2:50 **Session 2 - 4 talks (15 minute talk + 5 minute Q&A)**

Air-Light Estimation using Haze-Lines 115
Dana Berman, Tali Treibitz, Shai Avidan

Turbulence-Induced 2D Correlated Image Distortion 124
Armin Schwartzman, Marina Alterman, Rotem Zamir, Yoav Schechner

In Situ Target-Less Calibration of Turbid Media 137
Ori Spier, Tali Treibitz, Guy Gilboa

Invited Talk: Sub-Wavelength Coherent Diffraction Imaging using a Tabletop EUV Source
Margaret Murnane (University of Colorado)

2:50 - 3:00 **Awards announcements and closing remarks**