



- Keynotes, Invited Talks and Sessions
- Posters Demos Sponsors
- Registration Desk
- Elevators
- Industry Mentorship Event, Affinity Group Lunch, Community Outreach Orientation

SONY

KLA+

Snap Inc.

ubicept

pi imaging

CHANGING THE WAY WE COUNT PHOTONS

Google

kitware

MITSUBISHI ELECTRIC
Changes for the Better

SAMSUNG

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SAMSUNG RESEARCH AMERICA



IEEE International Conference on Computational Photography 2023

Madison, Wisconsin



Program

Friday, July 28 - Morning Session	
9:00 – 9:30	Opening Remarks
9:30 – 10:30	<p>Session 1 — 4 talks (11 minute talk + 4 minute Q&A)</p> <p>Learnable Polarization-multiplexed Modulation Imager for Depth from Defocus <i>Zhiwei Huang, Mingyou Dai, Tao Yue, Xuemei Hu</i></p> <p>Polarization Multi-Image Synthesis with Birefringent Metasurfaces <i>Dean S. Hazineh, Soon Wei Daniel Lim, Qi Guo, Federico Capasso, Todd Zickler</i></p> <p>Glare Removal for Astronomical Images with High Local Dynamic Range <i>Max-Olivier Van Bastelaer, Heiner Kremer, Valentin Volchkov, Jean-Claude Passy, Bernhard Schölkopf</i></p> <p>Using Zodiacal Light for Spaceborne Calibration of Polarimetric Imagers <i>Or Avitan, Schechner Yoav, Ehud Behar</i></p>
10:30 – 11:00	Invited talk: Unraveling Immune Cell Metabolism and Function at Single-cell Resolution <i>Melissa Skala</i>
11:00 – 11:30	Coffee Break
11:30 – 12:30	Keynote 1 - Aki Roberge, NASA <i>Towards Earth 2.0: Exoplanets and Future Space Telescopes</i>
12:30–2:00	Lunch; Industry Consortium Mentorship Event
Afternoon Session	
2:00 – 2:30	Invited talk: New Generation Photoacoustic Imaging: From Benchtop Wholebody Imagers to Wearable Sensors <i>Lei Li</i>
2:30 – 3:15	<p>Session 2 — 3 talks (11 minute talk + 4 minute Q&A)</p> <p>CoIR: Compressive Implicit Radar <i>Sean M. Farrell, Ashok Veeraraghavan, Ashutosh Sabharwal, Nathaniel Raymondi, Vivek Boominathan</i></p> <p>Parallax-Driven Denoising of Passively-Scattered Thermal Imagery <i>Connor Hashemi, Takahiro Sasaki, James R. Leger</i></p> <p>Moiré vision: A Signal Processing Technology Beyond Pixels using the Moiré Coordinate <i>Kensei Jo, Masahiko Inami</i></p>
3:15 – 3:30	Poster and Demo Spotlights 1
3:30 – 4:00	Coffee Break
4:00 – 5:30	Poster and Demo Session 1
5:30 – 6:30	Community Poster and Demo Session
6:30 – 8:00	Evening Cocktail Event
Saturday, July 29 - Morning Session	
9:30– 10:30	<p>Session 3 — 4 talks (11 minute talk + 4 minute Q&A)</p> <p>Learn to Synthesize Photorealistic Dual-pixel Images from RGBD frames <i>Feiran Li, Heng Guo, Hiroaki Santo, Fumio Okura, Yasuyuki Matsushita</i></p> <p>Denoising Diffusion Probabilistic Model for Retinal Image Generation and Segmentation <i>Alnur Alimanov, MD Baharul Islam</i></p> <p>NeReF: Neural Refractive Field for Fluid Surface Reconstruction and Rendering <i>Ziyu Wang, Wei Yang, Junming Cao, Qiang Hu, Lan Xu, Junqing Yu, Jingyi Yu</i></p> <p>Supervision by Denoising <i>Sean I. Young, Adrian V. Dalca, Enzo Ferrante, Polina Golland, Christopher Metzler, Bruce Fischl, Juan Eugenio Iglesias</i></p>
10:30 – 11:00	Invited talk: Color semantics for visual communication <i>Karen Schloss</i>
11:00 – 11:30	Coffee Break
11:30 – 12:30	Keynote 2 - Aaron Hertzmann, Adobe <i>A Perceptual Theory of Perspective</i>
12:30 - 2:00	Lunch; Affinity Group Meetings; Group Photo
Afternoon Session	
2:00 - 2:30	Invited talk: Imaging the Brain at High Spatiotemporal Resolution <i>Na Ji</i>

2:30 - 3:30	<p>Session 4 — 4 talks (11 minute talk + 4 minute Q&A)</p> <p>Spectral Sensitivity Estimation Without a Camera <i>Grigory Solomatov, Derya Akkaynak</i></p> <p>A Compact BRDF Scanner with Multi-conjugate Optics <i>Kensuke Uchida, Hajime Nagahara, Yasuyuki Matsushita</i></p> <p>Measured Albedo in the Wild: Filling the Gap in Intrinsic Evaluation <i>Jiaye Wu, Sanjoy Chowdhury, Hariharmano Shanmugaraja, David Jacobs, Soumyadip Sengupta</i></p> <p>Compact Self-adaptive Coding for Spectral Compressive Sensing <i>Zhan Shi, Hao Ye, Tao Lv, Yibo Wang, Xun Cao</i></p>
3:30 - 4:00	Industry consortium talk: Computational Image Sensing at Sony <i>Tomoo Mitsunaga</i>
4:00 - 4:15	Poster and Demo Spotlights 2
4:15 - 4:45	Coffee Break
4:45 - 6:15	Poster and Demo Session 2
6:15 - 10:00	Reception
Sunday, July 30 - Morning Session	
9:00 - 9:45	<p>Session 5 — 3 talks (11 minute talk + 4 minute Q&A)</p> <p>Near-light Photometric Stereo with Symmetric Lights <i>Lilika Makabe, Heng Guo, Hiroaki Santo, Fumio Okura, Yasuyuki Matsushita</i></p> <p>Aberration-Aware Depth-from-Focus <i>Xinge Yang, Qiang Fu, Mohamed Elhoseiny, Wolfgang Heidrich</i></p> <p>Count-Free Single-Photon 3D Imaging with Race Logic <i>Atul N Ingle, David Maier</i></p>
9:45 - 10:15	Invited talk: Welcome to the Underwater Micro World: The Art and Science of Underwater Microscopy <i>Jules Jaffe</i>
10:15 – 10:45	Coffee Break
10:45 – 11:15	Invited talk: New Material and Devices for Imaging <i>Hooman Mohseini</i>
11:15 – 12:15	Keynote 3 - Eric Fossum, Dartmouth <i>Quanta Image Sensors and Remaining Challenges</i>
12:15 – 12:45	Lunch; Industry Consortium Mentorship Event
12:45 – 2:00	Lunch (served)
Afternoon Session	
2:00 – 2:45	<p>Session 6 — 3 talks (11 minute talk + 4 minute Q&A)</p> <p>Isolating Signals in Passive Non-Line-of-Sight Imaging using Spectral Content <i>Connor Hashemi, Rafael Avelar, James R. Leger</i></p> <p>Fast Non-line-of-sight Imaging with Non-planar Relay Surfaces <i>Chaoying Gu, Talha Sultan, Khadijeh Masumnia-bisheh, Laura Waller, Andreas Velten</i></p> <p>Neural Reconstruction through Scattering Media with Forward and Backward Losses <i>Yuehan Wang, Siyuan Shen, Yanhua Yu, Su'an Xia, Xingyue Peng, Ruiqian Li, Shiyong Li, Jingyi Yu</i></p>
2:45 – 3:15	Invited talk: Towards the Next Generation of Smartphone Cameras <i>Jasper Tan</i>
3:15 – 4:00	<p>Session 7 — 3 talks (11 minute talk + 4 minute Q&A)</p> <p>Programmable Spectral Filter Arrays using Phase Spatial Light Modulators <i>Vishwanath Saragadam, Vijay Rengarajan, Ryuichi Tadano, Tuo Zhuong, Hideki Oyaizu, Jun Murayama, Aswin Sankaranarayanan</i></p> <p>Scattering-aware Holographic PIV with Physics-based Motion Priors <i>Miao Qi, Wolfgang Heidrich</i></p> <p>Stochastic Light Field Holography <i>Florian A Schiffers, Praneeth Chakravarthula, Nathan Matsuda, Grace Kuo, Ethan Tseng, Douglas Lanman, Felix Heide, Oliver Cossairt</i></p>
4:00 - 4:30	Closing Remarks