# Computational Imaging XIII

*Conference Chairs:* **Charles A. Bouman,** Purdue Univ. (USA); **Ken D. Sauer,** Univ. of Notre Dame (USA)

## Tuesday 10 February

> Location: Continental Ballroom 5 . . . . . Tue 8:30 am to 9:50 am
>
> ### Plenary Session and Society Award Presentations
>
> 8:30 am: **Analyzing Social Interactions through Behavioral Imaging** *(Plenary)*, James M. Rehg, Georgia Institute of Technology (USA) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . [9391-500]

Location: Continental Ballroom 4
and Golden Gate Foyer . . . . . . . . . . . . . Tue 5:30 pm to 7:00 pm

### Interactive Paper Session

*Interactive papers will be placed on display after 10:00 am on Tuesday. An interactive paper session, with authors present at their papers, will be held Tuesday evening, 5:30 to 7:00 pm. Refreshments will be served.*

**ISAR for concealed objects imaging**, Andrey Zhuravlev, Vladimir Razevig, Igor A. Vasiliev, Sergey I. Ivashov, Bauman Moscow State Technical Univ. (Russian Federation); Viacheslav V. Voronin, Don State Technical Univ. (Russian Federation) . . . . . . . . . . . . . . . . . . . . . . [9401-16]

**Three-dimensional gas temperature measurements by computed tomography with incident angle variable interferometer**, Satoshi Tomioka, Shusuke Nishiyama, Samia Heshmat, Yasuhiro Hashimoto, Kodai Kurita, Hokkaido Univ. (Japan) . . . . . . . . . . . . . . . . . . . . . . [9401-17]

**An MRI myocarditis index defined by a PCA-based object recognition algorithm**, Rocco Romano, Univ. degli Studi di Salerno (Italy); Igino De Giorgi, Azienda Ospedaliera Univ. (Italy); Fausto Acernese, Gerardo Giordano, Univ. degli Studi di Salerno (Italy); Antonio Orientale, Giovanni Babino, Azienda Ospedaliera Univ. (Italy); Fabrizio Barone, Univ. degli Studi di Salerno (Italy) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . [9401-18]

**Recovering all frequency lighting using Haar wavelets**, Junsuk Choe, Hyunjung Shim, Yonsei Univ. (Korea, Republic of) . . . . . . . . . . . [9401-19]

**A quantum algorithm for multipath time-delay detection and estimation**, John J. Tran, Information Sciences Institute (USA); Kevin J. Scully, Darren L. Semmen, The Aerospace Corp. (USA); Robert F. Lucas, Information Sciences Institute (USA). . . . . . . . . . . . . . . . . . . . . . . [9401-20]

**A no-reference perceptual blurriness metric based fast super-resolution of still pictures using sparse representation**, Jae-Seok Choi, Sung-Ho Bae, Munchurl Kim, KAIST (Korea, Republic of) . . . . . . [9401-21]

**Efficient capacitive touch sensing using structured matrices**, Humza Akhtar, Ramakrishna Kakarala, Nanyang Technological Univ. (Singapore) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . [9401-22]

> Location: Continental Ballroom Foyer . . . . . 5:30 pm to 7:30 pm
>
> ### Symposium Demonstration Session
>
> A symposium-wide demonstration session will be open to attendees 5:30 to 7:30 pm Tuesday evening. Demonstrators will provide interactive, hands-on demonstrations of a wide-range of products related to Electronic Imaging.

## Wednesday 11 February

> Location: Continental Ballroom 5 . . . . .Wed 8:30 am to 9:50 am
>
> ### Plenary Session and Conference Award Presentations
>
> 8:30 am: **What Makes Big Visual Data Hard?** *(Plenary)*, Alexei (Alyosha) Efros, Univ. of California, Berkeley (USA) . . . . . . . [9391-501]

Coffee Break . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Wed 9:50 am to 10:20 am

### Session 1

Location: Continental Ballroom 4 . . Wed 10:20 am to 12:20 pm

### Image Representation and Recovery

Session Chairs: **Charles A. Bouman,** Purdue Univ. (USA); **Ken D. Sauer,** Univ. of Notre Dame (USA)

10:20 am: **Motion compensated content adaptive mesh reconstruction of 4D cardiac SPECT data**, Francesc Massanes, Jovan G. Brankov, Illinois Institute of Technology (USA). . . . . . . . . . . . . . . . . . . . . . . . [9401-1]

10:40 am: **Image reconstruction in the presence of non-linear mixtures utilizing wavelet variable-dependency modeling in compressed sensing algorithms**, Lynn M. Keuthan, The George Washington Univ. (USA); Jefferson M. Willey, U.S. Naval Research Lab. (USA); Robert J. Harrington, The George Washington Univ. (USA) . . . . . . . . . . . . . [9401-2]

11:00 am: **Machine learning deconvolution filter kernels for image restoration**, Pradip Mainali, Rimmert Wittebrood, TP Vision (Belgium) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . [9401-3]

11:20 am: **Sparsity based noise removal from low dose scanning electron microscopy images**, Alina Lazar, Youngstown State Univ. (USA); Petru S. Fodor, Cleveland State Univ. (USA) . . . . . . . . . . . . . . . . [9401-4]

11:40 am: **Recovery of quantized compressed sensing measurements**, Grigorios Tsagkatakis, Foundation for Research and Technology-Hellas (Greece); Panagiotis Tsakalides, Foundation for Research and Technology-Hellas (Greece) and Univ. of Crete (Greece) . . . . . . . . . . . . . . . . . [9401-5]

12:00 pm: **Mobile image based color correction using deblurring**, Yu Wang, Purdue Univ. (USA); Chang Xu, Qualcomm Inc. (USA); Carol J. Boushey, Univ. of Hawai'i Cancer Ctr. (USA) and Purdue Univ. (USA); Edward J. Delp III, Purdue Univ. (USA) . . . . . . . . . . . . . . . . . . . . . [9401-6]

Lunch Break . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Wed 12:20 pm to 1:40 pm

## Session 2

**Location: Continental Ballroom 4  . . . . Wed 1:40 pm to 3:20 pm**

### Nondestructive Evaulation

Session Chairs: **Charles A. Bouman,** Purdue Univ. (USA); **Ken D. Sauer,** Univ. of Notre Dame (USA)

1:40 pm: **Rotationally-invariant non-local means for image denoising and tomography,** Suhas Sreehari, Singanallur Venkatakrishnan, Purdue Univ. (United States); Lawrence F. Drummy, Jeffrey P. Simmons, Air Force Research Lab. (United States); Charles A. Bouman, Purdue Univ. (United States) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . [9401-23]

2:00 pm: **Spectral x-ray diffraction using a 6 megapixel photon counting array detector**, Ryan D. Muir, Nicholas R. Pogranichniy, Purdue Univ. (USA); J. Lewis Muir, Argonne National Lab. (USA); Shane Z. Sullivan, Purdue Univ. (USA); Kevin Battaile, Anne M. Mulichak, Argonne National Lab. (USA); Scott J. Toth, Purdue Univ. (USA); Lisa J. Keefe, Argonne National Lab. (USA); Garth J. Simpson, Purdue Univ. (USA) . . . . . [9401-7]

2:20 pm: **Anomaly detection of microstructural defects in continuous fiber reinforced composites**, Stephen E. Bricker, Univ. of Dayton Research Institute (USA); Craig Przybyla, Air Force Research Lab. (USA); Russell C. Hardie, Univ. of Dayton (USA); Jeffrey P. Simmons, Air Force Research Lab. (USA) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . [9401-8]

2:40 pm: **Phase retrieval in arbitrarily-shaped aperture with the transport-of-intensity equation**, Lei Huang, Brookhaven National Laboratory (USA) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . [9401-9]

3:00 pm: **Acceleration of iterative image reconstruction for x-ray imaging for security applications**, David G. Politte, Washington Univ. in St. Louis (USA); Soysal Degirmenci, Washington Univ. in St Louis (USA); Carl M. Bosch, Nawfel Tricha, SureScan Corp. (USA); Joseph A. O'Sullivan, Washington Univ. in St. Louis (USA) . . . . . . . . . . . . . [9401-10]

Coffee Break . . . . . . . . . . . . . . . . . . . . . . . . . . . .Wed 3:20 pm to 3:40 pm

## Session 3

**Location: Continental Ballroom 4  . . . . Wed 3:40 pm to 5:20 pm**

### Image and System Analysis

Session Chairs: **Charles A. Bouman,** Purdue Univ. (USA); **Ken D. Sauer,** Univ. of Notre Dame (USA)

3:40 pm: **Image recovery of Granular Mirror Space Telescope images**, Xiaopeng Peng, Garreth J. Ruane, Alexandra B. Artusio-Glimpse, Grover A Swartzlander Jr., Rochester Institute of Technology (USA) . . . . . [9401-11]

4:00 pm: **Regularized image registration with line search optimization**, Lin Gan, Gady Agam, Illinois Institute of Technology (USA) . . . . . [9401-12]

4:20 pm: **Rectangular approximation of buildings from single satellite image using shadow analysis**, Gurshamnjot Singh, Mark Jouppi, Avideh Zakhor, Univ. of California, Berkeley (USA). . . . . . . . . . . . . . . . . . [9401-13]

4:40 pm: **Webcam classification using simple features**, Thitiporn Pramoun, King Mongkut's Univ. of Technology Thonburi (Thailand); Jeehyun Choe, He Li, Qingshuang Chen, Purdue Univ. (USA); Thumrongrat Amornraksa, King Mongkut's Institute of Technology Thonburi (Thailand); Yung-Hsiang Lu, Edward J. Delp III, Purdue Univ. (USA) . . . . . . . [9401-14]

5:00 pm: **Flatbed scanner simulation to analyze the effect of detector's size on color artifacts**, Mohammed Yousefhussien, Roger L. Easton Jr., Raymond Ptucha, Rochester Institute of Technology (USA); Mark Q. Shaw, Brent Bradburn, Jerry K. Wagner, David Larson, Hewlett-Packard Co. (USA); Eli Saber, Rochester Institute of Technology (USA). . . . . . [9401-15]