AIPR 2012—Daily Schedule

Tuesday, October 9

8:00 Check-in and Continental Breakfast

8:30 Welcome and Workshop Overview
   Al Williams, AIPR Committee Chair
   John Irvine and Bob Mericsko, Program Chairs

8:40 **Keynote Talk 1: An Overview of the DoD Data to Decisions Program**
   Dr. Carey Schwartz, Program Officer/Office of Naval Research

9:30 **Session 1 Novel Sensors and Sensing Methods**
   Session Chair: Dr. Neelam Gupta, US Army Research Laboratory

9:35 *Resource efficient, real-time, low latency histogram hardware*, Jonathan Fry, Michael Pusateri, Umar Mushtaq, heatfusion Inc. (AIPR201209)

9:55 *Simulating vision through time: Hierarchical, sparse models of visual cortex for motion imagery*, Amy E. Galbraith and Steven P. Brumby, Los Alamos National Laboratory (AIPR201215)

10:15 Coffee Break

10:30 *Multi-instance Learning Approach for Identifying Complex Facilities in Very High Resolution Imagery*, Ranga Raju Vatsavai, Oak Ridge National Laboratory (AIPR201218)

10:50 *Evidence Filtering in a Sequence of Images for Recognition*, Sukhan Lee and Ilyas Meo, Sungkyunkwan University, South Korea (AIPR201219)


11:30 *Polarization Imaging for Crystallographic Orientation of Large Mercurous Halide Crystals*, Feng Jin, Joo-Soo Kim, Susan Kutcher, Emir Hasovic, Dave Meyers, Sudhir Trivedi, Brimrose Corporation; Neelam Gupta, U.S. Army Research Laboratory (AIPR201224)

11:50 *A spectral graph based approach to analyze hyperspectral data*, Blake Hunter and Yifei Lou, University of California-Los Angeles (AIPR201225)
12:10  Lunch—on your own

1:30  *Focal Plane Array Folding for Efficient Information Extraction and Tracking*, Lei Hamilton, Dan Parker, Chris Yu, Piotr Indyk, Draper Laboratory (AIPR201233)

1:50  *Spatial Oversampling Beyond the Nyquist Limit in Imaging Sensors: Benefits in Sensitivity and Detection*, John Caulfield and Jerry Wilson, Cyan Systems Corporation (AIPR201234)

2:10  *Applications of Structural Discovery in Image Processing*, David Floyd, Draper Laboratory (AIPR201242)

2:35  **Session 2 Scene Modeling and Photogrammetry**
     Session Chair: Dr. Charles Cohen, Cybernet Systems Corporation


3:00  *Fusion of LIDAR Data with Hyperspectral and High-Resolution Imagery for Automation of DIRSTIG Scene Generation*, Karl C. Walli, Air Force Institute of Technology (AIPR201203)

3:20  Coffee Break

3:35  *Fusion of Synthetic Aperture Radar Data with High-Resolution Imagery for Automation of DIRSTIG Scene Generation*, Karl C. Walli, Air Force Institute of Technology (AIPR201243)

3:55  *Image Search System*, Peter Cho and Michael Yee, MIT Lincoln Laboratory (AIPR201205)

4:15  *Generation of Future Image Frames using Adaptive Network Based Fuzzy Inference System on Spatiotemporal Framework*, Nishchal K Verma, Indian Institute of Technology; Shimaila and Isha Kapoor, Banasthali University, India (AIPR201210)

4:35  *Obtaining Accurate Change Detection Results from High-Resolution Satellite Sensors*, N. Bryant, P. Kim, M. Smyth, T. Logan, R. Fretz, Jet Propulsion Laboratory/Caltech (AIPR201214)

4:55  *A Survey of Automated 3-Dimensional Scene Reconstruction Technologies*, Frank Tanner, National Geospatial-Intelligence Agency contractor (AIPR201227)

5:15  *Optimizing Computer Vision based Scene Reconstruction from Aerial Vehicles*, Jared Ekholm and Karl C. Walli, Air Force Institute of Technology (AIPR201201)
5:35 Visualization of Scene Structure Uncertainty in Multiview Reconstruction, Shawn Recker, Mauricio Hess-Flores, Mark Duchaineau and Kenneth Joy, University of California-Davis (AIPR201244; student paper)

6 PM Reception and Poster Session
Session Chair: Carlos Maraviglia, Naval Research Laboratory

Deriving Economic and Social Indicators from Imagery, John Irvine, Janet Lepanto, John Regan, Mon Young, Draper Laboratory (AIPR201239)

Automatic Ship Hull Inspection using Fuzzy Logic, David J. Muñoz, Juan Contreras, William Cuadrado, Vladimir Díaz, Geraldine Delgado, George Archbold, Escuela Naval Almirante Padilla (ENAP); Cartagena, Columbia (AIPR201241; student paper)

Action classification in polarimetric infrared imagery via diffusion maps, Sam Sakla, Air Force Research Laboratory (AIPR201246)

Path-Based Constraints for Accurate Scene Reconstruction from Aerial Video, Mauricio Hess-Flores, Mark A. Duchaineau and Kenneth I. Joy, University of California-Davis (AIPR201250)

Vessel Detection in Video with Dynamic Maritime Background, Michael T Chan and Christopher Weed, MIT Lincoln Laboratory (AIPR201251)

Wednesday, October 10

8:30 Check-in and Continental Breakfast

8:45 Keynote Talk 2 NRO’s Cold War Experience that Developed a Capability to Collect Remote Sensing Information; Potential Support for Environmental Monitoring and Disaster Response
Dr. Robert A. McDonald, Director/Center for the Study of National Reconnaissance, National Reconnaissance Office

9:30 Session 3 Remote Sensing Applications
Session Chair: Dr. James Aanstoos, Mississippi State University

9:35 Unsupervised Land Cover Classification in Multispectral Imagery with Sparse Representations on Learned Dictionaries, Daniela I. Moody, Steven P. Brumby, Joel C. Rowland, Chandana Gangodagamage, Los Alamos National Laboratory (AIPR201202)

9:55 Attribute Analysis of GPR Data for Heavy Minerals Exploration, Aycan Catakli, Hanan Mahdi, Haydar Al-Shukri, University of Arkansas at Little Rock (AIPR201204; student paper)
10:15 Coffee Break

10:30 Adaptive Sensor Fusion of Super-Resolution LiDAR and HIS Classifications, John Greer, Timothy Khuon, Robert Rand, National Geospatial-Intelligence Agency (AIPR201206)


11:10 Joint Ship Classification and Learning, Katia Estabrdis, Naval Air Warfare Center Weapons Division (AIPR201211)

11:30 Autonomous GEOINT Alerting R&D (AGARD) Program, Bruce Collins, National Geospatial-Intelligence Agency (AIPR201226)

11:50 Detection of Slump Slides on Earthen Levees Using Polarimetric SAR Imagery, James V. Aanstoos, Khaled Hasan, Charles G. O’Hara, Lalitha Dabbiru, Majid Mahrooghy, Rodrigo Nobrega, Matthew Lee, Mississippi State University (AIPR201228)

12:10 Lunch—on your own

2:00 Keynote Talk 3 Real-time Cardiac Magnetic Resonance Imaging and Computed Tomography
Dr. Elliott McVeigh, Massey Professor and Director/Department of Biomedical Engineering, Johns Hopkins University School of Medicine

2:45 Session 4 Biomedical and Biometric Applications
Session Chair: Dr. Murray Loew, The George Washington University

2:50 Novel features for silhouette based gait recognition systems, Arhiant Kochhar, Divyesh Gupta, N.S. Institute of Technology, New Delhi, India; M. Hanmandlu, India Institute of Technology; Shantaram Vasikarla, California State University (AIPR201221)

3:10 Human Identification Using Aerial FMV Imagery, Teddy Ko, Charles Li, Darrell Young, Raytheon (AIPR201222)

3:30 Coffee Break

3:45 Machine Learning Methods to Assist in Diagnosis of Skin Lesions, John M. Irvine, Draper Laboratory; Danica Mijovic-Prelec, Alex Huang, Drazen Prelec, Massachusetts Institute of Technology (AIPR201238)

4:05 Predicting Wound Outcome from Raman Spectroscopic Data: A Comparison of Univariate and Multivariate Data Analysis Techniques, Nicole J. Crane, Rajiv Luthra, Jonathan Forsberg, Eric A. Elster, Naval Medical Research Center (AIPR201247)
4:25  *Robust Needle Recognition using Neural Network (NN) and Random Sample Consensus (RANSAC)*, Jaewon Chang and Murat Cenk Cavusoglu, Case Western Reserve University (AIPR201248)

4:45  *Exploring the uses of fingerprint patterns and ridge counts in biographic associations*, Dale Herdegen, MITRE (AIPR201249)

5:05  *Online Biometric Authentication Using Facial Thermograms*, Madsu Hanmandlu and Mamta Bansal, Indian Institute of Technology; Shantaram Vasikaria, California State University (AIPR201252)

6 PM  **Banquet**

Banquet Speaker: Mr. John Larish  *Missed Opportunities at the Eastman Kodak Company: How Kodak Went ‘Out of Focus’*

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**Thursday, October 11**

8:30  Check-in and Continental Breakfast

8:45  **Keynote Talk 4**  *DARPA’s Mind’s Eye Program: The Way Ahead for Visual Intelligence*

Dr. James Donlon, Program Manager/Defense Advanced Research Projects Agency

9:30  **Session 5 Activity-based Analysis**

Session Chair: Dr. Steve Israel, Integrity Applications, Inc.


9:55  *Wide-Area Motion Imagery (WAMI) Exploitation Tools for Enhanced Situation Awareness*, Erik Blasch, Guna Seetharaman, Air Force Research Laboratory; Kannappan Palaniappan, University of Missouri-Columbia; Haibin Ling, Temple University; Genshe Chen, Information Fusion Technologies (AIPR201212)

10:15  Coffee Break

10:30  *Video Track Screening Using Syntactic Activity-based Methods*, Rick Wood, Tony McPherson, John Irvine, Draper Laboratory (AIPR201216)

10:50  *Registration of Region of Interest for Object Tracking Applications in Wide Area Motion Imagery*, Kevin Jackovitz and Vijayan Asari, University of Dayton (AIPR201217)

11:10  *A New Approach to Graph Analysis for Activity Based Intelligence*, William Raetz, Integrity Applications Incorporated (AIPR201220; student paper)
11:30 Lunch—on your own

1:00 *Session 6 Standards, Metrics and Performance*
   Session Chair: Robert Mericsko, Booz Allen Hamilton

1:05 *Video Calibration Sequence for Correlation of Objective Metrics to Interpretability Measures*, Darrell L Young, Andrew Watson, Dr. Block, Raytheon (AIPR201235)

1:25 *Spatial Feature Evaluation for Analyzing Aerial Scenes*, Thomas Swearingen, University of Tennessee; Anil Cheriyadat, Oak Ridge National Laboratory (AIPR201237; student paper)

1:45 *Enhanced Event Recognition in Video Using Image Quality Assessment*, John Irvine, Mon Young, Owen Deutsch, Erik Antelman, Draper Laboratory; Sadiye Guler, Ashutosh Morde, Xian Ma, Ian Pushee, IntuVision (AIPR201236)

2:05 *Closing Remarks*