<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td>Registration opens</td>
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<tr>
<td>9:00-9:45 AM</td>
<td><strong>Jason Matheny, Director, IARPA: Value of Machine Learning</strong></td>
</tr>
<tr>
<td></td>
<td>for National Security</td>
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<tr>
<td>9:45-10:05 AM</td>
<td>#20 Real-time detection and classification of traffic light signals;</td>
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<tr>
<td></td>
<td>Asaad Said, Intel</td>
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<tr>
<td>10:05-10:25 AM</td>
<td>#79 Machine vision algorithms for robust pallet engagement and</td>
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<tr>
<td></td>
<td>stacking; Charles Cohen, Cybernet Systems Corporation</td>
</tr>
<tr>
<td>10:25-10:40 AM</td>
<td>Coffee Break</td>
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<tr>
<td>10:40-11:00 AM</td>
<td><strong>SPARCNN: SPAtially Related Convolutional Neural Networks</strong></td>
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<td></td>
<td>J.T. Turner, Knexus Research Corporation</td>
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<tr>
<td>11:00-11:20 AM</td>
<td>#47 Crossview convolutional networks; Nathan Jacobs, University of</td>
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<td>Kentucky</td>
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<tr>
<td>11:25-12:00 PM</td>
<td>Trevor Darrell, EECS, University of California-Berkeley:</td>
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<tr>
<td></td>
<td>Perceptual representation learning across diverse modalities and</td>
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<td></td>
<td>domains</td>
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<tr>
<td>12:00-1:30 PM</td>
<td>Lunch on your own</td>
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<tr>
<td>1:30-2:15 PM</td>
<td><strong>Christopher Rigano, Office of Science and Technology,</strong></td>
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<td>National Institute of Justice: Applied Computer Science in</td>
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<td></td>
<td>Criminal Justice</td>
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<td>2:15-2:35 PM</td>
<td>#19 Trajectory based event classification from UAV videos and its</td>
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<td>evaluation framework; Sung Chun Lee, Object Video, Inc.</td>
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<tr>
<td>2:35-2:55 PM</td>
<td>#56 Transfer learning for high resolution aerial image classification;</td>
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<td>Yilong Liang, Rochester Institute of Technology</td>
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<tr>
<td>2:55-3:15 PM</td>
<td>#22 Visualization of high dimensional image features for</td>
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<tr>
<td></td>
<td>classification; Katie Rainey, SPAWAR Systems Center Pacific</td>
</tr>
<tr>
<td>3:15-3:30 PM</td>
<td>Coffee Break</td>
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</tbody>
</table>

**Note:** For brevity, this schedule lists only the presenter of each paper; all authors and their affiliations are included with each abstract, indexed using the # in the schedule.
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<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>3:30-4:05 PM</td>
<td>John Kaufhold, Deep Learning Analytics: Deep Learning Past, Present and Near Future</td>
</tr>
<tr>
<td></td>
<td><strong>Deep Learning for Image Processing II</strong></td>
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<tr>
<td>4:05-4:25 PM</td>
<td>#60 Hierarchical temporal memory for visual pattern recognition; Jianghao Shen, George Washington University</td>
</tr>
<tr>
<td>4:25-4:45 PM</td>
<td>#52 Hierarchical autoassociative polynomial network (hap net) for robust face recognition; Theus Aspiras, University of Dayton</td>
</tr>
<tr>
<td>4:45-5:05 PM</td>
<td>#63 Convolutional neural network application to plant detection, based on synthetic imagery; Larry Pearlstein, The College of New Jersey</td>
</tr>
<tr>
<td>5:10-5:30 PM</td>
<td>Poster Preview</td>
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<tr>
<td>5:30-6:00 PM</td>
<td>Cosmos Club Tour</td>
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<tr>
<td>6:00 PM</td>
<td>Poster Session and Reception</td>
</tr>
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</table>
**Tuesday Poster Session: Poster numbers, titles, and presenting author** (full list of authors appears on the Abstract page)

2  CSANG: continuous scale anisotropic Gaussians for robust linear structure extraction; V. B. Surya Prasath, University of Missouri-Columbia

7  Seismic signal analysis using multi-scale/multi-resolution transformations; Millicent Thomas, Northwest University

9  Assessment of three-dimensional printing using visible light sensing and a CAD model; Jeremy Straub, University of North Dakota

17 Object identification for inventory management using convolutional neural network; Nishchal K. Verma, Indian Institute of Technology Kanpur, India

30 Multi-scale transformation based image super-resolution; Soundararajan Ezekiel, IUP

33 Keypoint density-based region proposal for fine-grained object detection and classification using regions with convolutional neural network features; JT Turner, Knexus Research Corporation

35 General purpose object counting algorithm using cascaded classifier and learning; Ricardo Fonseca, Universidad Tecnica Federico Santa Maria

44 Adding a selective multiscale and color feature to loft base line; Noor Al-Shakarji, University of Missouri Columbia

45 Auto-calibration of multi-projector systems on arbitrary shapes; Mahdi Abbaspour Tehrani, UC-Irvine

54 Boosted ringlet features for robust object tracking; Evan Krieger, University of Dayton

58 Video haze removal and Poisson blending based mini-mosaics for wide area motion imagery; Rumana Aktar, University of Missouri-Columbia

62 Deep Learning and Artificial Intelligence Completeness; Mihaela Quirk, Quirk & Quirk Consulting

66 Stream implementation of the flux tensor motion flow algorithm using Gstreamer and CUDA; Dardo Kleiner, CIPS, Corp. @ NRL

78 Enhanced GroupSAC: Efficient and Reliable RanSAC scheme in the presence of depth variation; Kyung-Min Han, University of Missouri
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<tbody>
<tr>
<td>8:00 AM</td>
<td>Registration opens</td>
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<tr>
<td>8:45-9:30 AM</td>
<td>Richard Linderman, SES, Office of the Assistant Secretary of Defense, Research and Engineering: DoD Interests in Autonomy and Artificial Intelligence</td>
</tr>
<tr>
<td>9:30-9:50 AM</td>
<td>Scalable Image Processing</td>
</tr>
<tr>
<td>#26</td>
<td>Scaling analytics for scientific images from experimental instruments; Daniela Ushizima, Lawrence Berkeley National Laboratory</td>
</tr>
<tr>
<td>9:50-10:10 AM</td>
<td>Computationally efficient scene categorization in complex dynamic environments; Allison Mathis, Army Research Laboratory</td>
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<tr>
<td>10:10-10:30 AM</td>
<td>Uncertainty of image segmentation algorithms for forensic attribution of materials; Diane Oyen, Los Alamos National lab</td>
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<tr>
<td>10:30-10:45 AM</td>
<td>Coffee Break</td>
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<tr>
<td>10:45-11:05 AM</td>
<td>Earth &amp; Space Sensing Applications</td>
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<tr>
<td>#49</td>
<td>Sparse multi-image control for remotely sensed planetary imagery: the Apollo 15 metric camera; Jason Laura, United States Geological Survey</td>
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<tr>
<td>11:05-11:25 AM</td>
<td>On the utility of temporal data cubes for analyzing land dynamics; Peter Doucette, USGS</td>
</tr>
<tr>
<td>11:25-11:45 AM</td>
<td>Training and evaluating detection pipelines with connected components; Reid Porter, Kitware Inc.</td>
</tr>
<tr>
<td>11:45 AM-12:20 PM</td>
<td>Vijayakumar Bhagavatula, Associate Dean, Carnegie Mellon University: Innovations in Correlation Filter Design Architectures for Robust Object Recognition</td>
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<tr>
<td>12:20-1:45 PM</td>
<td>Lunch on your own. Executive Committee meeting</td>
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<tr>
<td>1:45-2:30 PM</td>
<td>Biomedical Image Analytics I</td>
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<tr>
<td>#5</td>
<td>The National Library of Medicine Pill Image Recognition Challenge: an initial report; Ziv Yaniv, National Library of Medicine</td>
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<tr>
<td>#1</td>
<td>Confocal vessel structure segmentation with optimized feature bank and random forests; V. B. Surya Prasath, University of Missouri-Columbia</td>
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<tr>
<td>#24</td>
<td>Registration of serial-section electron microscopy image sets for large volume neural circuit reconstruction; Arthur Wetzel, Pittsburgh Supercomputing Center</td>
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Wednesday October 19

High-Performance Computing & Biomedical
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<tr>
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<tr>
<td>3:30-3:45 PM</td>
<td>Coffee Break</td>
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<tr>
<td>3:45-4:30 PM</td>
<td>Nick Petrick, Center for Devices and Radiological Health, Food and Drug Administration: Validation of Quantitative Imaging and Computer-aided Diagnosis Tools</td>
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<tr>
<td></td>
<td><strong>Biomedical Image Analytics II</strong></td>
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<tr>
<td>4:30-4:50 PM</td>
<td>#12 Developing a retrieval based diagnostic aid for automated melanoma recognition of dermoscopic images; Mahmudur Rahman, Morgan State University</td>
</tr>
<tr>
<td>4:50-5:10 PM</td>
<td>#23 Exploiting the underlying cepstral coefficients for large scale and fine-tuned EKG time-imagery analysis; James LaRue, Jadco Signals</td>
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<tr>
<td>5:15-5:35 PM</td>
<td>Poster Preview</td>
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<td>5:45-6:15 PM</td>
<td>Cosmos Club Tour</td>
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<tr>
<td>5:45-7:00 PM</td>
<td>Poster Session and Reception</td>
</tr>
<tr>
<td>7:00-9:00 PM</td>
<td>Banquet <em>Terry Sejnowski: Deep Learning II</em></td>
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</table>
Wednesday Poster Session: Poster numbers, titles, and presenting author (all authors listed on the Abstract page)

3 Second stage PCA with real and interpolated data for pose angle and translation estimation in handshape recognition; Marlon Oliveira, Dublin City University

8 Use of visible light and infrared sensing capabilities to assess the safety of and detect damage to spacesuits; Jeremy Straub, University of North Dakota

11 Learning adaptable patch sizes for facial action unit detection; Duygu Cakir, Bahcesehir University

21 Gabor filter based entropy and energy features for basic image scene recognition; Balakrishna Gokaraju, University of West Alabama

27 Computer aided diagnostic system for automatic detection of brain tumor through MRI using clustering based segmentation technique and SVM classifier; Asim Ali Khan, Sant Longowal Institute of Engineering and Technology

29 Cloud-based interactive image segmentation using the firefly visualization tool; V. B. Surya Prasath, University of Missouri-Columbia

36 Morphological procedure for mammogram enhancement and registration; Huda Alghaib, Utah Valley University

38 Computational spectral capture and display; Aditi Majumder, UC-Irvine

39 Multi-feature fusion and PCA based approach for efficient human detection; Hussin Ragb, University of Dayton

40 Facial expression recognition based on video; Xin Song, Department of Computer Science and Technology, School of Computer and Communication Engineering, University of Science and Technology, Beijing

48 Dynamic eye misalignment retroversion system; Constantinos Glynos, National Center of Computer Animation, Bournemouth University

55 Vehicle-pedestrian dynamic interaction through tractography of relative movements and articulated pedestrian pose estimation; Lauren Christopher, Indiana University-Purdue University Indianapolis

71 Exploring image-based indicators of crime and economic well-being in sub-Saharan Africa; Payden McBee, Northeastern University and Draper

76 Face detection at multiple infrared bands; Zhan Yu, Adobe
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<tr>
<td>8:45-9:25 AM</td>
<td><strong>Joe Mundy, Brown University &amp; Vision Systems: 3-D Reasoning from an AI Perspective: History and Future</strong></td>
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<tr>
<td>9:30-9:50 AM</td>
<td>#61 A multiple view stereo benchmark for satellite imagery; Marc Ruiz, JHU</td>
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<tr>
<td>9:50-10:10 AM</td>
<td>#70 Reflectance retrieval from spatial high resolution multi-spectral and hyper-spectral imagery using point clouds; Christoph Borel-Donohue, ARL</td>
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<tr>
<td>10:10-10:30 AM</td>
<td>#77 Rapid development of scientific virtual reality applications; Scott Sorensen, University of Delaware</td>
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<td>10:30-10:45 AM</td>
<td>Coffee Break</td>
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<tr>
<td>10:45-11:05 AM</td>
<td><strong>3D &amp; Big Data II - Session Chair: Jason Schwendenmann, NGA</strong></td>
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<td>11:05-11:25 AM</td>
<td>#68 Building a living atlas in the cloud to analyze and monitor global patterns; Daniela Moody, Descartes Labs</td>
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<tr>
<td>11:25-11:45 AM</td>
<td>#81 Effective dataset augmentation for pose and lighting invariant face recognition; Daniel Crispell, Vision Systems, Inc.</td>
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<tr>
<td>11:45 AM-12:45 PM</td>
<td>Lunch on your own</td>
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<tr>
<td>1:00-1:45 PM</td>
<td><strong>Steven Brumby, Descartes Labs: From Pixels to Answers: Cloud-based forecasting of global-scale systems using a living atlas of the world</strong></td>
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<td>1:45-2:05 PM</td>
<td><strong>Image Quality I - Session Chair: John Irvine, Draper</strong></td>
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<tr>
<td>2:05-2:25 PM</td>
<td>#69 NIIRS prediction using in-scene estimation of parameters; John Irvine, Draper</td>
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<tr>
<td>2:25-2:45 PM</td>
<td>#67 Compression induced image quality degradation in terms of NIIRS; Genshe Chen, Intelligent Fusion Technology, Inc.</td>
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<tr>
<td>2:45-3:05 PM</td>
<td><strong>Image Quality II - Session Chair: John Irvine, Draper</strong></td>
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<tr>
<td>3:05-3:25 PM</td>
<td>#75 Automated video quality detection using scene segmentation and mover detection; Andrew Kalukin, National Geospatial-Intelligence Agency</td>
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<tr>
<td>3:25-3:45 PM</td>
<td>#74 Quality assessment of OCT-imagery of retina images in dry-AMD (Age-related Macular Degeneration) patients; Nastaran Ghadar, Draper</td>
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<td><strong>End of Workshop</strong></td>
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