

SSIAI 2018—PROGRAM SCHEDULE

IEEE SOUTHWEST SYMPOSIUM ON IMAGE ANALYSIS AND INTERPRETATION

April 8-10, 2018 | [Harrah's Hotel & Casino](http://www.harrah.com) | [Las Vegas, Nevada USA](http://www.lasvegas.com)
<http://www.ssi.ai.org>

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Sunday, April 8, 2018

5:30 Social Reception (Location TBD)

Monday, April 9, 2018

8:00-8:25 Registration

8:25-8:30 Opening

8:30-9:30 Plenary

9:30-10:15 (3 talks)

10:15-10:30 Break

10:30-11:45 (5 talks)

11:45-1:05 Lunch

1:05-2:05 Plenary

2:05-2:50 (3 talks)

2:50-3:05 Break

3:05-5:35 (9 talks)

6:30 pm Banquet, Wheel House

Tuesday, April 10, 2018

8:30-9:30 Plenary

9:30-10:15 (3 talks)

10:15-10:20 Break

10:20-12:05 (7 talks)

12:05-1:30 Lunch

1:30-2:30 (Patentability of Machine Learning and Image Analysis Technology)

2:30-3:15 (3 talks)

3:15-3:35 Break

3:35-4:50 (5 talks)

4:50 Conclusion

Monday, April 9, 2018

8:00 – 8:25	Registration
8:25 – 8:30	Opening
8:30 – 9:30	Ed Delp, "Precision Farming: There Really Is More Than Corn In Indiana"
M1	Image Enhancement and Restoration Fengqing Zhu, <i>Purdue University</i>
9:30 – 9:45 M1.1	1001: Underwater Image Restoration using Deep Networks to Estimate Background Light and Scene Depth Keming Cao, <i>University of California, San Diego</i> Yan-Tsung Peng, <i>University of California, San Diego</i> Pamels C. Cosman, <i>University of California, San Diego</i>
9:45 – 10:00 M1.2	1059: Thermal Image Enhancement Algorithm using Local and Global Logarithmic Transform Histogram Matching with Spatial Equalization Viacheslav Voronin, <i>Don State Technical University</i> Evgenii Semenishchev, <i>Don State Technical University</i> Sos Aгаian, <i>CUNY/The College of Staten Island Staten Island</i>
10:00 – 10:15 M1.3	2000: A Reflectance Based Method for Shadow Detection and Removal Sri Kalyan Yarlagadda, <i>Purdue University</i> Fengqing Zhu, <i>Purdue University</i>
10:15 – 10:30	Break
M2	Image Compression and Compressive Sensing
10:30 – 10:45 M2.1	1010: Reversible Color-To-Gray mapping with Resistance to JPEG Encoding Takahiko Horiuchi, <i>Chiba University</i> Xu Wen, <i>Chiba University</i> Keita Hirai, <i>Chiba University</i>
10:45 – 11:00 M2.2	1027: Image Compression: Sparse Coding vs. Bottleneck Autoencoders Yijing Watkins, <i>Los Alamos National Lab</i> Oleksandr Iaroshenko, <i>Los Alamos National Lab</i> Mohammad Sayeh, <i>Southern Illinois University Carbondale</i> Garrett Kenyon, <i>Los Alamos National Lab</i>
11:00 – 11:15 M2.3	1039: Complex Correntropy Induced Metric Applied to Compressed Sensing with Complex-Valued Data João Guimarães, <i>Federal Institute of Rio Grande do Norte</i> Aluisio Fontes, <i>Federal Institute of Rio Grande do Norte</i> Felipe da Silva, <i>University of Texas at El Paso</i> Allan Martins, <i>Federal University of Rio Grande do Norte</i> Ricardo von Borries, <i>University of Texas at El Paso</i>
M3	Biomedical Image Analysis Edward Delp, <i>Purdue University</i>
11:15 – 11:30 M3.1	1011: cTADA: The Design of a Crowdsourcing Tool for Online Food Image Identification and Segmentation Shaobo Fang, <i>Purdue University</i> Chang Liu, <i>Purdue University</i> Khalid Tahboub, <i>Purdue University</i> Fengqing Zhu, <i>Purdue University</i> Carol Boushey, <i>University of Hawaii Cancer Center</i> Edward Delp, <i>Purdue University</i>

11:30 – 11:45 1012: Sleep Analysis Using Motion and Head Detection

M3.2

Jeehyun Choe, *Purdue University*
 Daniel Mas Montserrat, *Purdue University*
 Amy J. Schwichtenberg, *Purdue University*
 Edward J. Delp, *Purdue University*

11:45 – 1:05

Lunch Break

M4**Biomedical Image Analysis II**Brian Nutter, *Texas Tech University*

1:05 – 2:05

Scott T. Acton, "Brain Pixels: image analysis for neuroscience"

2:05 – 2:20

1035: Graph Modularity and Randomness Measures

M4.1

Victor Vergara, *The Mind Research Network*
 Qingbao Yu, *The Mind Research Network*
 Vince Calhoun, *The Mind Research Network*

2:20 – 2:35

1036: f-Sim: A Quasi-Realistic fMRI Simulation Toolbox using Digital Brain Phantom and Modeled Noise

M4.2

Harshit Parmar, *Texas Tech University*
 Xiangyu Liu, *Texas Tech University*
 Brian Nutter, *Texas Tech University*
 Sunanda Mitra, *Texas Tech University*

2:35 – 2:50

1038: High-Homogeneity Functional Parcellation of Human Brain for Investigating Robust Functional Connectivity

M4.3

Xiangyu Liu, *Texas Tech University*
 Brian Nutter, *Texas Tech University*
 Sunanda Mitra, *Texas Tech University*

2:50 – 3:05

Break

M5**Image Models I**Mary Comer, *Purdue University*

3:05 – 3:20

2002: A Marked Point Process Model incorporating Active Contours Boundary Energy

M5.1

Camilo Aguilar, *Purdue University*
 Mary Comer, *Purdue University*

3:35 – 3:50

1033: Conjointly Space and 2D Frequency Localized Filter banks

M5.2

Peter Tay, *Western Carolina University*
 Yanjun Yan, *Western Carolina University*

3:50 – 4:05

1048: Shape Adaptive Accelerated Parameter Optimization

M5.3

Anthony Yezzi, *Georgia Institute of Technology*
 Navdeep Dahiya, *Georgia Institute of Technology*

4:05 – 4:20

1054: Golden Number Sampling Applied to Compressive Sensing

M5.4

Felipe Batista da Silva, *The University of Texas at El Paso*
 Ricardo von Borries, *The University of Texas at El Paso*

4:20 – 4:35

1057: A Comparison of Column Subset Selection Methods for Unsupervised Band Subset Selection in Hyperspectral Imagery

M5.5

Maher Aldeghlawi, *University of Texas at El Paso*
 Miguel Velez-Reyes, *University of Texas at El Paso*

M6**Object Detection and Deep Learning**

4:35 – 4:50

1047: Viola-Jones Algorithm for Automatic Detection of Hyperbolic Regions in GPR Profiles of Bridge Decks

M6.1	Mohammed Abdul Rahman, <i>Concordia University</i> Tarek Zayed, <i>Concordia University</i>
4:50 – 5:05	1050: Robust Head Detection in Collaborative Learning Environments Using AM-FM Representations
M6.2	Wenjing Shi, <i>University of New Mexico</i> Marios Pattichis, <i>University of New Mexico</i> Sylvia Celedón-Pattichis, <i>University of New Mexico</i> Carlos LópezLeiva, <i>University of New Mexico</i>
5:05 – 5:20	1062: Drive-Net: Convolutional Network for Driver Distraction Detection
M6.3	Mohammed S. Majdi, <i>University of Arizona</i> Sundaresh Ram, <i>Cornell University</i> Jonathan T. Gill, <i>University of Arizona</i> Jeffrey J. Rodriguez, <i>University of Arizona</i>
5:20 – 5:35	1063: The precision of triangulation in monocular visual odometry
M6.4	Nolang Fanani, <i>Goethe University Frankfurt</i> Rudolf Mester, <i>Goethe University Frankfurt</i>
6:30 p.m.	BANQUET AND ENTERTAINMENT: Dinner at the Wheel House overlooking the Linq Promenade and ride on the High Roller. The ride is optional and paid by the law firm of Weintraub Tobin.

Tuesday, April 10, 2018

8:30 – 9:30	Al Bovik, "The 'Ins' and 'Outs' of Perceptual Streaming Video"
T1	Image and Video Quality Models Amy R. Reibman, <i>Purdue University</i>
9:30 – 9:45	2001: Strategies for Quality-Aware Video Content Analytics Amy R. Reibman, <i>Purdue University</i> .
T1.1	
9:45 – 10:00	1013: On the Natural Statistics of Chromatic Images
T1.2	Zeina Sinno, <i>The University of Texas at Austin</i> Alan Bovik, <i>The University of Texas at Austin</i>
10:00 – 10:15	1044: Natural Scene Statistics for Noise Estimation
T1.3	Praful Gupta, <i>The University of Texas at Austin</i> Christos Bampis, <i>The University of Texas at Austin</i> Yize Jin, <i>The University of Texas at Austin</i> Alan Bovik, <i>The University of Texas at Austin</i>
10:15 – 10:20	Break
T2	Biomedical Image Analysis III
10:20 – 10:35	1060: Classification of Primary Cilia in Microscopy Images Using Convolutional Neural Random Forests
T2.1	Sundaresh Ram, <i>Cornell University</i> Mohammed S. Majdi, <i>University of Arizona</i> Jeffrey J. Rodriguez, <i>University of Arizona</i> Yang Gao, <i>University of Utah</i> Heddwen L. Brooks, <i>University of Arizona</i>
10:35 – 10:50	1017: In-between and cross-frequency dependence-based summarization of resting-state fMRI data
T2.2	Maziar Yaesoubi, <i>The Mind Research Network</i> Rogers Silva, <i>The Mind Research Network</i> Vince Calhoun, <i>The Mind Research Network</i>

10:50 – 11:05 **1042: Fully Automatic Baseline Correction in Magnetic Resonance Spectroscopy**
 T2.4 Omid Bazgir, *Texas Tech University*
 Sunanda Mitra, *Texas Tech University*
 Brian Nutter, *Texas Tech University*
 Eric Walden, *Texas Tech University*

T3 Machine Learning and Deep Learning Methods

11:05 – 11:20 **1018: Artifact Detection Maps Learned using Shallow Convolutional Networks**
 T3.1 Todd Goodall, *University of Texas at Austin*
 Alan Bovik, *University of Texas at Austin*

11:20 – 11:35 **1031: Estimating Plant Centers Using A Deep Binary Classifier**
 T3.2 Yuhao Chen, *Purdue University*
 Javier Ribera, *Purdue University*
 Edward Delp, *Purdue University*

11:35 – 11:50 **1043: Automatic Assessment of Hoarding Clutter Using Convolutional Neural Networks**
 T3.3 M. Ozan Tezcan, *Boston University*
 Janusz Konrad, *Boston University*
 Jordana Muroff, *Boston University*

11:50 – 12:05 **1058: Performance of Supervised Classifiers for Damage Scoring of Zebrafish Neuromasts**
 T3.4 Rohit Philip, *University of Arizona*
 Sree Ramya Malladi, *University of Arizona*
 Maki Niihori, *University of Arizona*
 Abraham Jacob, *Center for Neurosciences*
 Jeffrey J. Rodriguez, *University of Arizona*

12:05 – 1:30 **Lunch Break**

1:30 – 2:30 **Panel: "Myths, Rumors, and the Law: Patentability of Machine Learning and Image Analysis Technology"**

T4 Real-Time Image Processing and Hardware Acceleration

2:30 – 2:45 **1015: Efficient Face And Gesture Recognition For Time Sensitive Application**
 T4.1 Anush Ananthakumar, *Georgia Institute Of Technology*

2:45 – 3:00 **1020: Efficient GPU-based implementation of the median filter based on a multi-pixel-per-thread framework**
 T4.2 Gabriel Salvador, *Pontificia Universidad Catolica del Peru*
 Juan M. Chau, *Pontificia Universidad Catolica del Peru*
 Jorge Quesada, *Pontificia Universidad Catolica del Peru*
 Cesar Carranza, *Pontificia Universidad Catolica del Peru*

3:00 – 3:15 **1032: A New Hardware Architecture for the Ridge Regression Optical Flow Algorithm**
 T4.3 Taylor Simons, *Brighan Young University*
 Dah Jye Lee, *Brighan Young University*

3:15 – 3:35 **Break**

T5 Object Detection and Data Fusion

3:35 – 3:50 **1023: A Novel Semi-Supervised Detection Approach with Weak Annotation**
 T5.1 Eric K. Tokuda, *University of São Paulo*
 Gabriel B. A. Ferreira, *University of São Paulo*

3:50 – 4:05 **1041: Fused Reasoning under Uncertainty for Soldier Centric Human-Agent Decision**
 T5.2 Adrienne Raglin, *Army Research Lab*
 Andre Harrison, *Army Research Lab*
 Douglass Summers-Stay, *Army Research Lab*

4:05 – 4:20	1051: A Ground-Truth Fusion Method for Image Segmentation Evaluation
T5.3	Sree Ramya S. P. Malladi, <i>University of Arizona</i> Sundaresh Ram, <i>Cornell University</i> Jeffrey J. Rodriguez, <i>University of Arizona</i>
4:20 – 4:35	1056: Context-Sensitive Human Activity Classification in Collaborative Learning Environments
T5.4	Abigail Jacoby, <i>The University of New Mexico</i> Marios Pattichis, <i>The University of New Mexico</i> Sylvia Celedon-Pattichis, <i>The University of New Mexico</i> Carlos LopezLeiva, <i>The University of New Mexico</i>
4:35 – 4:50	1019: DDT: Decentralized event Detection and Tracking using an ensemble of vertex-reinforced walks on a graph
T5.5	Tamal Batabyal, <i>University of Virginia</i> Scott T. Acton, <i>University of Virginia</i>
4:50 – 5:00	Conclusion