SSIAI 2026 — Program Schedule

IEEE Southwest Symposium on Image Analysis And Interpretation

March 22 – 24, 2026 | La Fonda on the Plaza | Santa Fe, New Mexico USA

http://www.ssiai.org

Sunday, March 22, 2026

4:30pm – 5:45pm: Registration
6:00pm – 7:30pm: Reception
Santa Fe Room at the La Fonda Hotel (appetizers provided)

Monday, March 23, 2026

7:30am – 8:00am: Registration
8:00am – 8:05am: Opening
8:05am – 9:10am: Plenary
9:10am – 10:25am: MA1 (5 talks)
10:25am – 10:45am: Break
10:45am – 12:00pm: MA2 (5 talks)
12:00pm – 1:25pm: Lunch
1:25pm – 2:30pm: Plenary
2:30pm – 3:30pm: MP1 (4 talks)
3:30pm – 3:50pm: Break
3:50pm – 4:50pm: MP2 (4 talks)
6:30pm: Banquet Osteria D' Assisi

Tuesday, March 24, 2026

7:30am – 8:00am: Registration
8:05am – 9:10am: Plenary
9:10am – 10:10am: TA1 (4 talks)
10:10am – 10:30am: Break
10:30am – 11:30am: TA2 (4 talks)
11:30am – 1:00pm: Lunch
1:00pm – 2:05pm: Plenary
2:05pm – 3:05pm: TP1 (4 talks)
3:05pm – 3:25pm: Break
3:25pm – 4:25pm: TP2 (4 talks)
4:25pm – 4:30pm: Closing

Plenary Speakers

Alan Bovik, University of Colorado Boulder
Edward Delp, Purdue University
Aggelos Katsaggelos, Northwestern University
Amanda Ziemann, Los Alamos National Laboratory

Sponsor: **IEEE COMPUTER SOCIETY**

Monday, March 23, 2026 (Santa Fe Room)

7:30 am – 8:00 am	**Registration**
8:00 am – 8:05 am	**Opening Remarks**
8:05 am – 9:10 am	**Alan Bovik — "A Perceptual View of GenAI Distortions"**

MA1 **9:10 am – 10:25 am**	**Detection, Segmentation, and Object Recognition** Session Chair: *Joseph Havlicek, University of Oklahoma*

MA1.1
9:10 am – 9:25 am

P1003 — Fine-Tuning Pre-Trained Faster R-CNN to Reduce False Positives in Guardrail Damage Detection from Dashcam Images

Sonny Jones — *University of Utah*
Anthony Le — *University of Utah*
Rohit Raj — *University of Utah*
David Sacharny — *University of Utah*
Ziad Al-Halah — *University of Utah*
Thomas Henderson — *University of Utah*
Sridhar Kundur — *Bentley Systems*

MA1.2
9:25 am – 9:40 am

P1009 — An Integrated Deep Learning Architecture for Illumination-Aware Object Detection

Mostafa Habibi — *The University of Texas at Dallas*
Mehrdad Nourani — *The University of Texas at Dallas*

MA1.3
9:40 am – 9:55 am

P1014 — Instance Camera Focus Prediction For Crystal Agglomeration Classification

Xiaoyu Ji — *Purdue University*
Chenhao Zhang — *Purdue University*
Tyler Downard — *Purdue University*
Zoltan Nagy — *Purdue University*
Ali Shakouri — *Purdue University*
Fengqing Zhu — *Purdue University*

MA1.4
9:55 am – 10:10 am

P1022 — Event-Triggered YOLO Segmentation For Measuring Drop-Induced Cavities Over Submerged Sediments

Fnu Rishikesh — *Texas Tech University*
Arian Iqbal — *Texas Tech University*
Hossein Haghgou — *Texas Tech University*
Brian Nutter — *Texas Tech University*
Hadis Matinpour — *Texas Tech University*
Hamed Sari-Sarraf — *Texas Tech University*

MA1.5
10:10 am – 10:25 am

P1037 — Explorations and Challenges in Extending Dataset Condensation to the Object Detection Paradigm

Harshavardhini Bagavathyraj — *The University of Texas at El Paso*
Daniel Grollman — *Plus One Robotics*

10:25 am – 10:45 am	BREAK

MA2 **10:45 am – 12:00 pm**	**APPLIED IMAGE ANALYSIS AND EDUCATIONAL METHODS** Session Chair: *Rudolf Mester, Norwegian University of Science & Technology*

MA 2.1 **10:45 am – 11:00 am**	**P1042 — TWENTY-FIVE YEARS OF J-DSP ONLINE LABS FOR SIGNAL PROCESSING CLASSES AND WORKFORCE DEVELOPMENT PROGRAMS** Andreas Spanias — *Arizona State University*
MA 2.2 **11:00 am – 11:15 am**	**P1044: FAST FACE RECOGNITION AND TRACKING IN COLLABORATIVE LEARNING ENVIRONMENTS** Phuong Tran — *The University of New Mexico* Sylvia Celedon-Pattichis — *The University of Texas at Austin* Marios Pattichis — *The University of New Mexico*
MA 2.3 **11:15 am – 11:30 am**	**P1038 — ME AND CHATGPT: MAKING AN IMAGE PROCESSING CLASS DEMO SUITE** Alan C. Bovik — *University of Colorado Boulder*
MA 2.4 **11:30 am – 11:45 am**	**P1045 — FOOD PORTION ESTIMATION: FROM PIXELS TO CALORIES** Gautham Vinod — *Purdue University* Fengqing Zhu — *Purdue University*
MA 2.5 **11:45 am – 12:00 pm**	**P1047 — IMPLICIT-SCALE 3D RECONSTRUCTION FOR MULTI-FOOD VOLUME ESTIMATION FROM MONOCULAR IMAGES** Yuhao Chen — *University of Waterloo* Gautham Vinod — *Purdue University* Siddeshwar Raghavan — *Purdue University* Talha Ibn Mahmud — *Purdue University* Bruce Coburn — *Purdue University* Jinge Ma — *Purdue University* Fengqing Zhu — *Purdue University* Jiangpeng He — *Indiana University Bloomington*

12:00 pm – 1:25 pm	LUNCH

1:25 pm – 2:30 pm	**Aggelos Katsaggelos — "Physics Informed Machine Learning"**

MP1 **2:30 pm – 3:30 pm**	**BIOMEDICAL IMAGE ANALYSIS I** Session Chair: *Edward Delp, Purdue University*

MP 1.1 **2:30 pm – 2:45 pm**	**P1019 — MULTIMODAL FUSION OF STRUCTURAL AND DIFFUSION MRI FOR INTELLIGENCE PREDICTION** Ram Sapkota — *Georgia State University* Bishal Thapaliya — *Georgia State University* Jingyu Liu — *Georgia State University*

MP 1.2
2:45 pm – 3:00 pm

P1033 — CELLGENNET: A KNOWLEDGE-DISTILLED FRAMEWORK FOR ROBUST CELL SEGMENTATION IN CANCER TISSUES
    Srijan Ray — *Georgia Institute of Technology*
    Bikesh Nirala — *Emory University*
    Jason Yustein — *Emory University*
    Sundaresh Ram — *Emory University & Georgia Institute of Technology*

MP 1.3
3:00 pm – 3:15 pm

P1034 — KRANOSDENSE: SPATIAL QUANTIFICATION OF SKULL DENSITY RATIO FOR NEUROSURGICAL PLANNING
    Samarth Singh — *University of Virginia*
    G. Wilson Miller — *University of Virginia*
    Scott T. Acton — *University of Virginia*

MP 1.4
3:15 pm – 3:30 pm

P1007 — T-SNE-BASED ANALYSIS OF BRAIN STATE DYNAMICS DURING READING OF AI VS HUMAN WRITING
    Harshit Parmar — *Texas Tech University*
    Eric Walden — *Texas Tech University*

3:30 pm – 3:50 pm	BREAK

MP2
3:50 pm – 4:50 pm

IMAGE MODELING AND APPLICATIONS
Session Chair: *Gangadharan Esakki, Nvidia*

MP 2.1
3:50 pm – 4:05 pm

P1035 — FACTORING MULTI-CHANNEL LFPS INTO INTERPRETABLE COMPONENTS USING LOCALLY-COMPETITIVE SPARSE CODING
    Nicholas Bruns — *Los Alamos National Laboratory*
    Garrett Kenyon — *Los Alamos National Laboratory*

MP 2.2
4:05 pm – 4:20 pm

P1023 — LOOK OUT FOR NEW SPIDERS: ARANEAE SPECIES OOD DETECTION USING ENSEMBLE POOLING
    Zi Kang Deng — *University of Arizona*
    Jeffrey J. Rodriguez — *University of Arizona*

MP 2.3
4:20 pm – 4:35 pm

P1004 — GENERATIVE AI FOR DATASET ENRICHMENT IN EDGE CASE CAMOUFLAGE OBJECT DETECTION TASKS
    Nathan Bartley — *Texas Tech University*
    Ranadip Pal — *Texas Tech University*

MP 2.4
4:35 pm – 4:50 pm

P1024 — SIMULATING SONAR RETURNS FROM LIDAR USING BEAM PATTERN CORRELATION
    Eric Zietz — *Baylor University*
    Eugene Chabot — *University of Rhode Island / Naval Undersea Warfare Center*
    John DiCecco — University of Rhode Island / Naval Undersea Warfare Center
    Scott Koziol — Baylor University

6:30 pm   BANQUET: Osteria D' Assisi, 58 S Federal Pl, Santa Fe, NM, (505) 986-5858
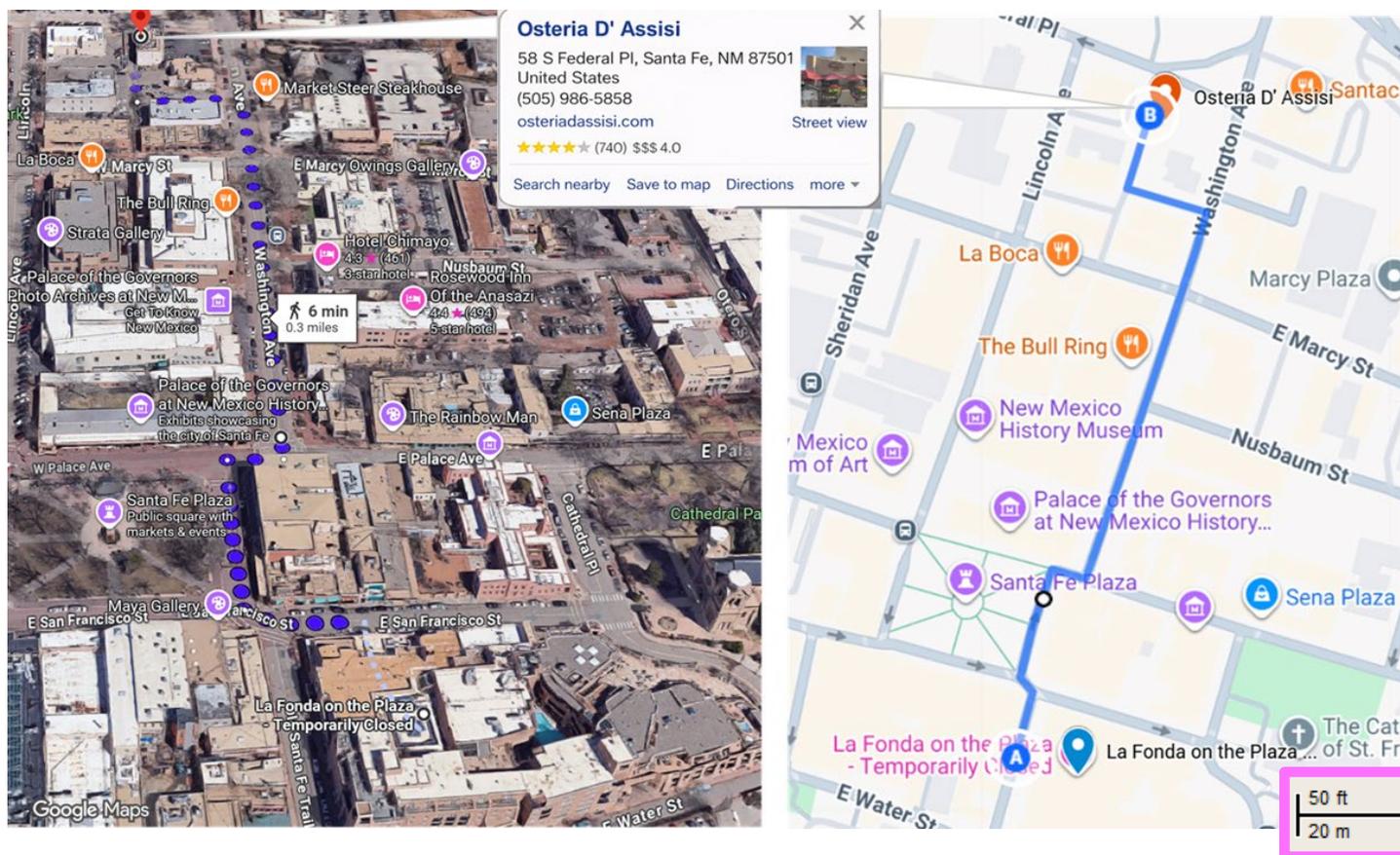
Banquet starts at 6:30pm.

Location: Osteria D' Assisi, 58 S Federal Pl, Santa Fe, NM, (505) 986-5858

(Limited banquet tickets available for purchase during registration.)

Please bring your Banquet ticket.

See the following map for directions.

TUESDAY, MARCH 24, 2026 (SANTA FE ROOM)

7:30 am – 8:00 am	**Registration**

8:05 am – 9:10 am	**Edward Delp — "Forty Years of Signal Processing!** **The Reflections of an Old Professor"**

TA1 **9:10 am – 10:10 am**	**BIOMEDICAL IMAGE ANALYSIS II** Session Chair: *Scott Acton, University of Virginia*

TA 1.1
9:10 am – 9:25 am

P1017 — IDENTIFY IMAGING-GENOMICS ASSOCIATION IN ADOLESCENTS VIA DECENTRALIZED PARALLEL INDEPENDENT COMPONENT ANALYSIS
Chan Aek Panichvatana — *Georgia State University*
Bishal Thapaliya — *Georgia State University*
Vivek Benegal — *National Institute of Mental Health and Neuro Sciences*
Bharath Holla — *National Institute of Mental Health and Neuro Sciences*
Gunter Schumann — *King's College London*
Nilakshi Vaidya — *Charité Universitätsmedizin Berlin*
Vince Calhoun — *Georgia State University*
Jingyu Liu — *Georgia State University*

TA 1.2
9:25 am – 9:40 am

P1016 — REPAIR: A FRAMEWORK FOR AIRWAY SEGMENTATION AND DISCONTINUITY CORRECTION IN CT
John M Oyer — *University of Michigan*
Ali Namvar — *University of Michigan*
Benjamin A Hoff — *University of Michigan*
Wassim W Labaki — *University of Michigan*
Ella A Kazerooni — *University of Michigan*
Charles R Hatt — *4DMedical*
Fernando J Martinez — *University of Massachusetts*
MeiLan K Han — *University of Michigan*
Craig J Galbán — *University of Michigan*
Sundaresh Ram — *Emory University & Georgia Institute of Technology*

TA 1.3
9:40 am – 9:55 am

P1008 — TOWARDS PRACTICAL AI IN NEUROIMAGING: 3D DEEP LEARNING FOR ALZHEIMER'S DETECTION
Harshit Parmar — *Texas Tech University*
Eric Walden — *Texas Tech University*

TA 1.4
9:55 am – 10:10 am

P1026 — A STUDY OF NEUROIMAGING AND GENETIC NON-LINEAR ASSOCIATIONS FOR BRAIN DEVELOPMENT
Bhaskar Ray — *Georgia State University / TReNDS*
Dawn Jensen — *TReNDS / Georgia State University*
Ram Sapkota — *Georgia State University*
Jiayu Chen — *Georgia State University*
Vince D. Calhoun — *Georgia State University / TReNDS*
Jingyu Liu — *Georgia State University / TReNDS*

10:10 am – 10:30 am	BREAK

TA2 **10:30 am – 11:30 am**	**IMAGE ENHANCEMENT AND TRANSFORM METHODS** Session Chair: *Marios Pattichis, University of New Mexico*

TA 2.1
10:30 am – 10:45 am

P1010 — ROTATION-ROBUST RADIOMICS: DIFFERENTIABLE GLCM
    Haoyue Chen — *Georgia Institute of Technology*
    Rosario Corso — *Università degli Studi di Palermo*
    Albert Comelli — *Ri.MED Foundation*
    Anthony Yezzi — *Georgia Institute of Technology*

TA 2.2
10:45 am – 11:00 am

P1012 — LIGHTWEIGHT PHYSICS-BASED AND EVENT-GUIDED UNSUPERVISED LEARNING FOR LOW-LIGHT ENHANCEMENT
    Trung Hoang — *Apple Inc.*
    Anustup Choudhury — *Dolby Laboratories Inc.*
    Dongdong Fu — *Dolby Laboratories Inc.*
    Jonathan Miller — *Dolby Laboratories Inc.*
    Bill Villarreal — *Dolby Laboratories Inc.*

TA 2.3
11:00 am – 11:15 am

P1020 — What's Beneath the Mask?: Implicit Maximum LIKELIHOOD ESTIMATION FOR SINGLE-STEP IMAGE RESTORATION
    Soumee Guha — *University of Virginia*
    Scott T. Acton — *University of Virginia*

TA 2.4
11:15 am – 11:30 am

P1043 — ON THE SPATIOSPECTRAL LOCALIZATION OPTIMALITY OF THE DISCRETE HIRSCHMAN TRANSFORM AND CONSTRUCTION OF REAL-VALUED 2D SEPARABLE BLOCK TRANSFORMS
    Elnaz Aghdaei — *University of Oklahoma*
    Obada Muhammad — *University of Oklahoma*
    Tomasz Przebinda — *University of Oklahoma*
    Murad Ozaydin — *University of Oklahoma*
    Joseph P. Havlicek — *University of Oklahoma*

11:30 am – 1:00 pm	LUNCH

1:00 pm – 2:05 pm	Amanda Ziemann — "Going Beyond Single Sensors – Open Challenges in Modern Remote sensing"

TP1 **2:05 pm – 3:05 pm**	**REMOTE SENSING AND GEOSPATIAL ANALYSIS** Session Chair: *Jingyu Liu, Georgia State University*

TP 1.1
2:05 pm – 2:20 pm

P1005 — CHARACTERIZING NEURAL RADIANCE FIELD MODELS FOR 3D SCENE UNDERSTANDING OF HYPERSPECTRAL IMAGERY
    Scout Jarman — *Utah State University*
    Sophia Zorek — *Rice University*
    Kevin Moon — *Utah State University*
    Adra Carr — *Los Alamos National Laboratory*
    Zigfried Hampel-Arias — *Los Alamos National Laboratory*

TP 1.2 2:20 pm – 2:35 pm	**P1040 — A**RCTIC **C**OASTAL **B**OUNDARY **D**ETECTION IN **H**IGH-**R**ESOLUTION **S**ATELLITE **I**MAGERY

Harshavardhini Bagavathyraj — The University of Texas at El Paso
Olac Fuentes — The University of Texas at El Paso
Sergio Vargas — The University of Texas at El Paso
Craig E Tweedie — The University of Texas at El Paso

TP 1.3 2:35 pm – 2:50 pm	**P1028 — S**PECTRAL **F**EATURE **L**EARNING FOR **S**OIL **C**ARBON **E**STIMATION **U**SING A **D**ILATED **C**ONVOLUTIONAL **N**ETWORK

Maowen Tang — *Prairie View A&M University*
Yonghui Wang — *Prairie View A&M University*
Raghava Kommalapati — *Prairie View A&M University*
Hongbo Du — *Tarleton State University*
Lai Jiang — *Prairie View A&M University*
Peter Ampim — *Prairie View A&M University*
Chris Dealing — *Shell International Exploration and Production, Inc.*
Olukayode Kuloyo — *Shell International Exploration and Production, Inc.*

TP 1.4 2:50 pm – 3:05 pm	**P1029 — E**XPLORING **AI**-**A**SSISTED **T**RANSLATION AND **C**LIMATE **D**ATA **E**XTRACTION FROM **A**LASKAN **R**USSIAN **M**ISSIONARY **D**IARIES: **A**RCTIC **C**LIMATE **R**ESEARCH

Abigail Galarza — *The University of Texas at El Paso*
Valeria Quintero — *The University of Texas at El Paso*
Christoph Lauter — *The University of Texas at El Paso*
Olga Lauter — *The University of Texas at El Paso*
Alex Mayer — *The University of Texas at El Paso*
Benjamin Good — *The University of Texas at El Paso*

3:05 pm – 3:25 pm	**BREAK**
TP2 3:25 pm – 4:25 pm	**M**ACHINE **L**EARNING AND **R**OBUST **AI** Session Chair: *Jiangpeng He, Indiana University Bloomington*

TP 2.1 3:25 pm – 3:40 pm	**P1027 — M**ULTISENSOR **F**USION **A**DVERSARIAL **T**EXTURE **A**TTACKS FOR **A**UTONOMOUS **V**EHICLES

Jonathan McGee — *University of Virginia*
Scott T. Acton — *University of Virginia*
Matthew Korban — *University of Virginia*

TP 2.2 3:40 pm – 3:55 pm	**P1030 — I**NVERTING **N**EURAL **N**ETWORKS: **N**EW **M**ETHODS TO **G**ENERATE **N**EURAL **I**NPUTS **F**ROM **P**RESCRIBED **O**UTPUTS

Rebecca Pattichis — *University of California, Los Angeles*
Sebastian Janampa — *University of New Mexico*
Constantinos Pattichis — *University of Cyprus*
Marios Pattichis — *University of New Mexico*

TP 2.3	**P1011 — Causal reasoning & Context-Aware Decision Making for Unmanned Aerial Systems**
3:55 pm – 4:10 pm	Atul Rawal — *Research Institute for Tactical Autonomy* Noor Ahmed — *Research Institute for Tactical Autonomy*

TP 2.4	**P1031 — Adversarial Attack Transferability and Defenses for Vision Transformers**
4:10 pm – 4:25 pm	Adhitya Bantwal Bhandarkar — *University of New Mexico*

4:25 pm – 4:30 pm	**Closing**