

# Conference Program

**7:30 AM - 8:30AM**

Conference Registration

Outside Main Ballroom

Poster Setup

Ballroom C

Breakfast

Main Ballroom

## **OPENING SESSION**

Main Ballroom

**8:30AM - 9:00AM**

- Nadim Aziz, South Carolina EPSCoR Director
- Tim Stemmler, South Carolina EPSCoR State Committee Chair
- Tanju Karanfil, ADAPT in SC Principal Investigator

## **AI IN PRACTICE AND EDUCATION**

Main Ballroom

Session Moderator: Jihad Obeid, Professor, Medical University of South Carolina

**9:00AM - 10:00AM**

- **University of South Carolina School of Medicine Columbia – AI Extracurricular Track.** *Leonardo Bonilha*, Professor and Senior Associate Dean for Research, USC School of Medicine.
- **AI in Clinical Practice: South Carolina Clinicians' Adoption Priorities, Use Preferences, and Implementation Concerns.** *Emma Wituk*, Graduate Student; *Shelia Cotten*, Associate Vice President for Research Development; *Catherine Mobley*, Professor; *Xia Jing*, Associate Professor; *Tareq Khan*, Assistant Professor, Clemson University.
- **Artificial Intelligence Enhanced Pedagogy in Developmental Psychology: A Mixed-Methods Study of Student Learning and Engagement.** *Mahalah Campbell*, Assistant Professor, Claflin University.

## **POSTER SESSION**

Ballroom C

**10:15AM - 11:15AM**

## **PARALLEL SESSIONS**

**11:30AM - 12:30PM**

### **AI For Clinical Insights**

Hall of Fame Room

Session Moderator: Michael Matthews, Professor, University of South Carolina

- **Identification of Individuals Living with Likely Incurable Cancer from Electronic Health Records Using Large Language Models.** *Chad Arledge*, Postdoctoral Fellow; *Gaylen Fronk*, Postdoctoral Fellow; *Jennifer Dahne*, Professor; *Evan Graboyes*, Professor; *Jihad Obeid*, Professor; Medical University of South Carolina.

# Conference Program

- **Transparent Multimodal ICU Mortality Prediction Across Early Horizons with Per-Case Modality Attribution.** *Alexander Bakumenko*, Graduate Student; *Janine Hoelscher*, Assistant Professor; *D. Hudson Smith*, Assistant Professor, Clemson University.
- **Hierarchical Hybrid Pipeline Combining Semantic Enrichment and LLM Reasoning for Resource-Efficient ADRD Phenotyping.** *Akinwale Famotire*, Graduate Student; *Frederick Gyasi*, Graduate Student; *Paul Heider*, Assistant Professor; *Sara Knox*, Associate Professor; *Jihad Obeid*, Professor, Medical University of South Carolina.

## AI in Biomedical Modeling

Lincoln Room

Session Moderator: *Qi Wang*, Professor, University of South Carolina

- **Data-driven Spatiotemporal Modeling Reveals Personalized Trajectories of Cortical Atrophy in Alzheimer's Disease.** *Chunyan Li*, Postdoctoral Fellow, University of South Carolina; *Yutong Mao*, Graduate Student; *Xiao Liu*, Professor; *Wenrui Hao*, Professor, Penn State University.
- **The SIFT Causal Transform: A Method for Explainable Image Classification on Small Multimodal Data Sets with Complex Backgrounds and Variable Quality Images.** *Ivan Dungan*, Associate Professor, Francis Marion University; *Jordon Gilmore*, Assistant Professor; *Namrata Surve*, Graduate Student, Clemson University; *Tytrez Dixon*, Undergraduate Student; *Lanorah Hobbs*, Undergraduate Student, Francis Marion University.
- **AI-Guided Design of Collagen Scaffolds via Two-Photon Patterning and Image-Based Segmentation.** *Wesley Nichols*, Graduate Student; *Lucas Schmidt*, Lecturer; *Luke Peterson*, Undergraduate Student; *Bruce Z. Gao*, Professor, Clemson University.

## LUNCH

Main Ballroom

12:30PM - 1:45PM

### Luncheon Speaker

- **Building an AI Ecosystem: MUSC's Strategy for Research, Infrastructure, and Impact.** *Marylyn Ritchie*, Professor and Chief Artificial Intelligence Officer, Medical University of South Carolina.

## POSTER SESSION

Ballroom C

1:45PM - 2:45PM

# Conference Program

## PARALLEL SESSIONS

3:00PM – 4:00PM

### Cyber Infrastructure Security

Hall of Fame Room

Session Moderator: Jean-Michel Tine, Graduate Research Assistant, Clemson University

- **Quantum-Enhanced Cybersecurity for Connected City IoT.**  
*Abdullah Al Mamun, Graduate Student; Mashrur Chowdhury, Professor, Clemson University.*
- **Feasibility of Post-Quantum Homomorphic Encryption for Privacy-Preserving I2I Communication in Intelligent Transportation Systems.** *Abdullah Al Mamun, Graduate Student; Antsa Pierrottet, Graduate Student; Kyle Yates, Professor; Mashrur Chowdhury, Professor; Ryann Cartor, Assistant Professor; Shuhong Gao, Professor, Clemson University.*
- **A Threat Modeling Framework for Transportation and Related Digital Infrastructure Systems Using Large Language Models.**  
*M Sabbir Salek, SR. Engineer; Mohammad Imtiaz Hasan, Graduate Student; Jean Michel Tine, Graduate Student; Mashrur Chowdhury, Professor, Clemson University.*

### Advanced Biosensing and Detection

Lincoln Room

Session Moderator: Daniel Noneaker, Professor, Clemson University

- **Synergistic MXene-LDH Hybrids for Enhanced Lipase Immobilization and Electrochemical Triglyceride Biosensing.**  
*Nandhini Subramanian, Graduate Student; Zahra Adibag, Graduate Student; Peyton Quathamer, Undergraduate Student; Nader Taheri-Qazvini, Assistant Professor, University of South Carolina.*
- **Advanced Impedance Sensing Techniques for Submicron Bioparticle Analysis.** *Leilei Shi (Assistant Professor, College of Charleston)*
- **Robust Hardware Trojan Detection Leveraging Dual-Domain Features and Stacked Ensemble Learning.** *Sefatun-Noor Puspa (Graduate Student, Clemson University)*

## CONFERENCE WRAP UP & AWARDS

Main Ballroom

4:15PM – 4:30PM

# Poster Presentations

1. **Whole-Organ Three-Dimensional Mapping of Murine Tissues Using Optimized Clearing Strategies and Light-Sheet Fluorescence Microscopy.** *Atin Bakhshi, Meenakshi Mukherji, Jiaxin Chai, Peng Chen, Tong Ye (Clemson University)*
2. **AI-Driven GPS Spoofing Attack Detection for Critical Infrastructure Protection.** *Abyad Enan, Mashrur Chowdhury (Clemson University)*
3. **Assisting Medical Patients Navigate Safely in Hospital Environments: Creating Robots using Machine Learning Tools for Maze Solving and Obstacle Avoidance.** *Ananiah Myers, Mark Wells, Balaji Iyengar, Negash Begashaw (Benedict College)*
4. **Digital Twin-Based Intrusion Detection Framework for In-Vehicle CAN Bus Security.** *Araf Rahman, M. Sabbir Salek, Mashrur "Ronnie" Chowdhury (Clemson University)*
5. **Her Patterns: Tracking pain and emotional cycle using machine learning.** *Bariat Shuaib (Benedict College)*
6. **Interpretable AI: Evaluating Explainability in NBNN and PC Algorithm Frameworks.** *Brandon Samuel, Ivan Dungan (Francis Marion University)*
7. **Energy Dissipation Rate-Based Adaptive Sampling for Physics-Informed Neural Networks: Resolving Surface-Bulk Dynamics in Allen-Cahn Systems.** *Chunyan Li, Qi Wang (University of South Carolina), Wenkai Yu (The Hong Kong University of Science and Technology)*
8. **Electroencephalogram (EEG)-Based Seizure Prediction.** *Carlisa Wright (Benedict College)*
9. **SAMPLE - Sampling Brain Risk Maps for Low Risk Voxels.** *Liz Chandler, Janine Hoelscher (Clemson University)*

10. **In-Vehicle Digital Twin-Based Collision Warning Framework with Sybil Attack Detection.** *Mohammad Imtiaz Hasan, Abyad Enan, Jean Michele Tine, M Sabbir Salek, Mashrur Chowdhury* (Clemson University)
11. **Image Analysis and Simulation for Intravascular Ultrasound Catheter Localization.** *Hannah Hodge, Janine Hoelscher* (Clemson University)
12. **Leveraging NSF S-STEM Project Results to Understand Rural-Urban Contexts in STEM Education.** *Joseph Flaherty, Susan Henderson* (Coker University)
13. **Developing AI-Enabled Models to Predict Colorectal Cancer Recurrence from Small Datasets.** *Jianguo Hou, Qi Wang, Xiang Cao, Xinhang Wei* (University of South Carolina), *Xin Tan, Hua Jiang* (University of Electronic Science and Technology of China)
14. **Real-World Evaluation of Protocol-Compliant Denial-of-Service Attacks on C-V2X-based Forward Collision Warning Systems.** *Jean Michel Tine, Mohammed Aldeen, Abyad Enan, M Sabbir Salek, Mashrur Chowdhury* (Clemson University)
15. **Objective Signals and Subjective Mental Health.** *Olivia King, Sophia Kozlowski, Navid Hashemi* (College of Charleston)
16. **Limits of Clinical Biomarkers for Predicting Self-Reported Mental Health.** *Sophia Kozlowski, Olivia King, Navid Hashemi* (College of Charleston)
17. **Resolution-Aware Bayesian Classification of Simulated Geometric Shapes Using SIFT and NBNN.** *Lanorah Hobbs,* (Francis Marion University)
18. **Advanced Manufacturing and Post Processing of Two-photon AI based Collagen Scaffolds.** *Luke Peterson, Wesley Nichols, Lucas Schmidt, Bruce Gao* (Clemson University)
19. **Explainable CNN Framework for Wound Image Classification.** *Luyi Li, Namrata Surve, Jordon Gilmore* (Clemson University), *Ivan Dungan* (Francis Marion University)

20. **Development and evaluation of a nanofiber-based flexible electrochemical graphene sensor for chronic wounds monitoring.** Md Salauddin Sk, Azrin Jamison, *Benjamin Schwartz*, Sydney Demers, *Logan Rush* (Clemson University), Robert Klein (Prisma Health, University of South Carolina School of Medicine) Jordon Gilmore (Clemson University)
21. **Label-Free Imaging Of Joint Condyles With Curved Surfaces Using Nonlinear Optical Microscopy.** *Meenakshi Mukherji*, Wan Shen Hee, Atin Bakhshi, Tong Ye (Clemson University), Joseph Carson (College of Charleston)
22. **Defining Success: Black Women's Narratives in Professional Mathematics Spaces.** *Morgin Jones Williams* (University of South Carolina Beaufort)
23. **Biodiversity and Environmental Automated Monitoring (BEAM) System.** *Raiz Mohammed*, Gabriel Gonzalez, Noel Challa, Alexander Lance, Jaylen Small (Francis Marion University)
24. **Virtual Reality Mock Interview (VRMI) System with an AI-Driven Backend.** Tytrez Dixon, Raiz Mohammed, *Vien Trieu*, M. Padmaja Rao (Francis Marion University)
25. **Cluster Based Electrical Impedance Spectroscopy for Detection of Submicron Particles.** *Chad Murphy*, Leilei Shi (College of Charleston)
26. **Explainable NLP for Detecting Depression and Suicide Risk in Social Media Posts.** *Nickola Simpson*, Negash Begashaw (Benedict College)
27. **Enhancing Pre-Cancerous Lesion Detection in 3D-Imaging Device through the Implementation of Adjustable Brightness in LED Headlights.** *Nisa Soltani*, Kevin Gainey, Qian Zhang, Joe Carson (College of Charleston)
28. **Hospital Readmissions.** *Omario Guscott*, *Kamala Rashford* (Benedict College)
29. **Demographic Robustness of Vision Language Models for Pedestrian Detection Tasks.** *Ostonya Thomas*, Yongkai Wu, Yucong Dai, Mashrur Chowdhury (Clemson University)

30. **Effects of Hydration State on the Micro-Structural Integrity of Marine Sponges.** *Reagan Roberts, Dylan Simmons, Chris Freeman, Dj Connor (College of Charleston)*
31. **AI Powered Signal Intensity Correction for Particles in a Square Capillary.** *Whitney Schuler, Chen Wang, Lexi Deford, Michael Myrick (University of South Carolina) Lexi Deford, Jeong-Yeol Yoon (University of Arizona)*
32. **Micro-CT Imaging of Sea Sponges for Computational Fluid Analysis.** *Dylan Simmons, (College of Charleston)*
33. **AI-Enabled Construction of Aligned Collagen Using Two-Photon Techniques.** *Shrikant Pawar, Caliese Beckford (Claflin University) Wesley Nichols, Bruce Gao (Clemson University)*
34. **Machine Learning Diagnosis of Peripheral Arterial Disease from CT-Angiography (CTA) Images.** *Shrikant Pawar, Caliese Beckford, Verlie Tisdale, Amrinder Singh, Subash Neupane, Oluwademiladeayo Ashade, Swikriti Neupane, Bimal Itan (Claflin University)*
35. **Cardiovascular disease prediction – A Machine Learning Approach.** *Xavier White, Trey Newton, Blake Nichols, Janmejay Mohanty, Nikunja Swain (South Carolina State University)*
36. **SEMANTIC Search for Healthcare Patient Data using Sentence Transformers and ChromaDB.** *Joniqua Bates, Shani Walker, Megan Rabb, Janmejay Mohanty, Nikunja Swain (South Carolina State University)*
37. **Deep Learning for Skin Lesion Detection: A CNN Approach.** *Jaleel Johnson, Zy'Aier Frazier, Tyler Brown, Janmejay Mohanty, Nikunja Swain (South Carolina State University)*
38. **Effect of synthesis parameter on the viscosity and thermal conductivity of ionic liquids-based nanofluids.** *Jacob Phillips, Othello Cooper, Richard Hutto, Daniel Ortiz, Titan Paul (University of South Carolina-Aiken)*
39. **Building a Convolutional Neural Network to Provide Explainability.** *Tytrez Dixon, (Francis Marion University)*

40. **3D Polarization-Resolved Second Harmonic Generation Imaging for AI-Enabled Computational Modeling.** *Vincent Holsenback, Joshua Taylor, Bruce Z. Gao (Clemson University), Qi Wang (University of South Carolina)*
41. **Black-Box Adversarial-Robustness Evaluation of an LSTM-Based IoT Intrusion Detection System.** *William Hall, Shadi Sadeghpour (The Citadel)*
42. **Handheld Laser Speckle Contrast Imaging for Noninvasive Assessment of Skin Lesion Microvascular Perfusion in Clinical Dermatology.** *Shelby Smith, Manuel Valdebran (Medical University of South Carolina), Nicholas Stiebler, Wan Shen Hee, Tong Ye (Clemson University)*
43. **Data-Driven Predictive Modeling Using Small Routine Laboratory Datasets for Critically Ill Patients,** *Xiang Cao, Jianguo Hou, Xinhang Wei, Qi Wang (University of South Carolina), Mengjie Deng, Jun Zeng, Hua Jiang (University of Electronic Science and Technology of China)*
44. **Sequential Interfacial Drawing and Fiber Fusion of  $Ti_3C_2Tx$  MXene Hybrid Fibers for Electromagnetic Interference Shielding.** *Zahra Adibag, Smriti Sakhamuru, Nandhini Subramanian, Nader Taheri Qazvini (University of South Carolina)*
45. **A New Dataset of Wrist Motion For Training Eating Detection Classifiers.** *Yu Xuan, Brycen Havens, Adam Hoover (Clemson University)*
46. **An Innovative Approach To Module-Based Learning For Biology Junior Seminar Courses.** *Steffani Driggins, Randall Harris (Claflin University)*
47. **Research Administration Capacity Heightening in South Carolina (REACH-SC): Enhancing the South Carolina Research Enterprise Workforce.** *Amy Schuster, Shelia Cotten (Clemson University), Susan Anderson (College of Charleston), Jonathan Smalls (Claflin University)*