

Conference Program

(Full authorship of abstracts will be included in the final program)

7:30 AM - 8:30AM

Conference Registration

Outside Main Ballroom

Poster Setup

Ballroom C

Light Breakfast

Main Ballroom

OPENING SESSION

Main Ballroom

8:30AM - 9:00AM

PARALLEL SESSIONS

9:00AM - 10:00AM

ADAPT in SC-Session I

Hall of Fame

- *Real-time XAI Visualization for Safe Steerable Needle Deployment.* Janine Hoelscher (Clemson University)
- *All of Us data revealed the impact of social determinants of health on mental health disorders.* Sasimonthakan Tanarsuwongkul (University of South Carolina)
- *Advancing Impedance Flow Cytometry with Artificial Neural Networks for Robust Signal Analysis.* Leilei Shi (College of Charleston)

Materials Science

Senate

- *Comparative biomechanics of insect antenna.* Megan Bishoff (Clemson University)
- *Fiber-Like MXene/Polyelectrolyte Structures via Dynamic Interfacial Complexation for EMI Shielding Applications.* Nader Taheri-Qazvini (Univeristy of South Carolina)
- *Halogen Bonding in Deep Eutectic Solvents and Cocrystals: New Insights into Molecular Interactions.* Logan Grady (Clemson University)

POSTER SESSION

10:00AM - 11:00AM

Ballroom C

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PARALLEL SESSIONS

11:10AM – 12:10PM

ADAPT in SC-Session II

Hall of Fame

- *A Physics-informed Data-science Approach to Ventricular Septal Defect –Towards Pediatric Digital Twins.* Mitchel Colebank (University of South Carolina)
- *How to Adapt Pre-trained AI Models to Bio/Medical Images?* Siyu Huang (Clemson University)
- *Unsupervised Medical Video Denoising and Feature Extraction for Biomedical Imaging.* Nianyi Li (Clemson University)

Cybersecurity-Session I

Senate

- *Future-Proofing Transportation Cyber-Physical Systems: The Role of Post-Quantum Cryptography.* Abdullah Al Mamun (Clemson University)
- *Autoencoders vs FGSM: Comparison of Machine-Learning Models for Detecting Adversarial Perturbations in Image Classification* Tosin Jimoh (Benedict College)
- *Cyber Resilience in Transportation: Navigating Quantum Computing Opportunities.* M Sabir Salek (Clemson University)

LUNCH

12:10PM – 12:55PM

Main Ballroom

SCIENCE & TECHNOLOGY PLAN

12:55PM – 2:25PM

S&T Presentations

Main Ballroom

- *Manufacturing.* Ramy Harik (Clemson University)
- *AI.* Homay Valafar (University of South Carolina)
- *Cybersecurity.* Ronnie Chowdhury (Clemson University)
- *Energy.* William Mustain (University of South Carolina)

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PARALLEL SESSIONS

2:35PM - 3:35PM

Hall of Fame

ADAPT in SC-Session III

- *Causal Discovery on SIFT Descriptors for Explainable Image-Based Wound Classification.* Ivan Dungan (Francis Marion University)
- *Integrating Advanced Statistical Modeling and Convolutional Neural Networks for Early Detection and Prognostic Assessment of Alzheimer's Disease Onset: A Neuroinformatics Approach.* Kayode Karunwi (Anderson University)
- *Exam-level Classification with Multi-instance Learning.* Hudson Smith (Clemson University)

Cybersecurity-Session II

Senate

- *FL based Intrusion Detection System in an Enterprise Network.* Pratap Kumar Sahu (Claflin University)
- *Towards Trustworthy Machine Learning: Exploring and Addressing Emerging Threats to Security, Privacy, and Safety.* Xiaoyong (Brian) Yuan (Clemson University)
- *Saving AI from Itself: Defending Healthcare Systems Against Adversarial Threats.* Alyssa Gerhart (Benedict College)

STEM Research

Lincoln

- *Data Visualization as An Effective Communication Tool Using SRNS Data.* Brevin Samuel (South Carolina State University)
- *Systems Engineering Model for the SC Upstate Electrical Energy System.* John MacCarthy (Wofford College)
- *Safety Assessment Using Job Safety Analysis (JSA) in SRS.* Isaiah Thompson (South Carolina State University)

BREAK

3:35PM - 3:50PM

Main Ballroom

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CAMPUS WIDE STEM EDUCATION

3:50PM - 4:20PM

Main Ballroom

Campus-Wide STEM Education

- *EnrichCS: Enhancing Computing Research through Service-Learning Innovation and Academic-Industry Collaboration.*
Hong Jiang (Benedict College)
- *AI/ML Outreach Outside the Classroom at Clemson.*
Carl Ehrett (Clemson University)

CONFERENCE AWARDS

4:20PM - 4:35PM

Main Ballroom

CONFERENCE ADJOURN

Poster Presentations

*Number indicates the poster number.

Morgin Jones Williams. *Mathematically Brilliant and Black: A Visionary's HerStory of Determination, Inspiration, and Success*. University of South Carolina Beaufort **(1)**

Nadia Ihsan Omer. *Comparative Evaluation of Automated Machine Learning (AutoML) Tools for Crop Yield Prediction*. South Carolina State University **(2)**

Jean Michel Tine. *Quantum-Inspired LSTM for False Information Attack Detection in Connected Vehicles*. Clemson University **(3)**

Abdullah Al Mamun. *Optimizing Lattice-Based Signatures for Secure and Efficient ITS Applications Against an SVD-based BDD Attack*. Clemson University **(4)**

Sefatun-Noor Puspa. *Side Channel Power Analysis-Based Non-Invasive Detection of Hardware Trojans in Cyber-Physical Systems*. Clemson University **(5)**

Wesley Nichols. *Designing Next Generation Scaffolds: Two Photon and Artificial Intelligence Mediated Collagen Fibrillogenesis*. Clemson University **(6)**

Nyah Pee. *Leveraging SIFT for Explainable AI: A Naive-Bayes Nearest Neighbor Approach*. Francis Marion University **(7)**

Abyad Enan. *A GAN-based Defense Strategy for Adversarial Patch Attack Resilient Traffic Sign Classification for Autonomous Vehicles*. Clemson University **(8)**

Alyssa Gerhart. *Saving AI from Itself: Defending Healthcare Systems Against Adversarial Threats*. Benedict College **(9)**

Tosin Jimoh. *Autoencoders vs FGSM: Comparison of Machine-Learning Models for Detecting Adversarial Perturbations in Image Classification*. Benedict College **(10)**

Jean Michel Tine. *Quantum-Inspired LSTM for False Information Attack Detection in Connected Vehicles*. Clemson University **(11)**

Ostonya Thomas. *Enhancing Cybersecurity in Transportation Systems: Policies, Technologies, and LLMPowered Threat Awareness*. Clemson University **(12)**

Bariat Shuaib. *Predicting Migraine Onset Using Wearable Biometric and Environmental Data*. Benedict College **(13)**

Reek Majumder. *Graph-Powered Defense: Controller Area Network Intrusion Detection for Unmanned Aerial Vehicles*. Clemson University **(14)**

Jacob Reeder. *Comparing Deep Learning and Stochastic Model Approaches for Musical Chord Recognition*. Francis Marion University **(15)**

Elena Yu. *Organoiodine and Selone Cocrystals*. Clemson University **(16)**

Makenna Lankford. *Halogen Bonding in Novel Thioimidazole-Organiodine Cocrystals*. Clemson University **(17)**

Yu Xuan. *Track Wrist Motion in Real Time to Assist in Monitoring Eating Behaviors*. Clemson University **(18)**

Poster Presentations

Tytrez Dixon. *Experimental Determination of Learning Rate Schedule for OOP Perceptron Class*. Francis Marion University **(19)**

Harsh Ravivarapu. *Digital Deep Brain Stimulator for Personalized Parkinson's Disease Treatment*. Clemson University **(20)**

Maridee Ritzer. *Versatile Halogen Bonds in Iodopyridine-Organiodine Cocrystals and Deep Eutectic Solvents*. Clemson University **(21)**

Akshani Anjula Wijesooriya. *Synthesis and metabolic incorporation of cyclopropanol derivatized sphingosines*. University of South Carolina **(22)**

Thongpon Meethong. *Stimuli-responsive dynamic covalent hydrogel for virus stabilization and delivery*. University of South Carolina **(23)**

Jinnawat Jongkhumkrong. *Electrochemically promoted ring-opening reaction of cyclopropanol derivatives for organic synthesis and bioconjugation*. University of South Carolina **(24)**

Nasrollah Hamidi. *Performance Evaluation of Atmospheric Water Generators Under Suboptimal Humidity Conditions in Orangeburg, SC*. South Carolina State University **(25)**

Richard Ugland. *A Density Functional Theory (DFT) Study of Structure and Photophysical Properties of Low Bandgap Cofacial Polymers for Organic Solar Cell Application*. University of South Carolina Upstate **(26)**

Siyu Huang. *Scale-Style Selection for Test-Time Augmentation in Biomedical Image Segmentation*. Clemson University **(27)**

Vincent Holsenback. *A Scalable Approach to Collecting Cellular-Resolution Training Data for AI-Enabled Cardiac Digital Twins*. Clemson University **(28)**

Mohammad Imtiaz Hasan. *Cache-based side channel attack on Critical ITS Infrastructure*. Clemson University **(29)**

Elizabeth Chandler. *VISION - Vessel Segmentation MapS Driving AutOMated Needle Insertion*. Clemson University **(30)**

Patience Badger. *The Effects of AI on Rural Water Systems*. Voorhees University **(31)**

Stephen O'Rourke. *Investigating the Immunomodulatory Effects of CDK8/19 Inhibitor SNX631 in HER2+ Breast Cancer Models*. University of South Carolina **(32)**

Shrikant Pawar. *Machine learning applications on CTA data for diagnosis of peripheral artery diseases (PAD)*. Claflin University **(33)**

Araf Rahman. *Digital Twin-Based Real-Time Curve Speed Warning System Using Physics Simulation*. Clemson University **(34)**