

ICAISSET2026



[Conference](#) »Program

 2026 International Conference on Artificial Intelligence, Systems, and Emerging Technologies (ICAISSET) Program

Time (Cairo)	ROOM-A	ROOM-B	ROOM-C	ROOM-D	ROOM-E	COFFEE
Tuesday, April 21						
08:30-09:00						
09:00-10:00						
10:30-11:00						NETWORKING <i>COFFEE BREAK</i> <i>POSTER SESSION</i> STUDENTS & FACULTY SESSION (COMPETITIVE)
11:00-11:30						
11:30-12:00	SESSION-1A: <i>RESEARCH: UAV-Assisted Networking, Deployment Optimization & Aerial Applications</i> 6 PAPERS	SESSION-1B: <i>RESEARCH: IoT-Based Smart Systems & Environmental Monitoring</i> 6 PAPERS	SESSION-1C: <i>RESEARCH: Edge AI, Federated Learning & Distributed Intelligence Architectures</i> 6 PAPERS	SESSION-1D: <i>RESEARCH: : Cybersecurity: Threat Detection, Malware & Intrusion Prevention</i> 6 PAPERS	SESSION-1E: RESEARCH: <i>Security Frameworks, Critical Infrastructure Protection & Post-Quantum</i> 6 PAPERS	
12:00-13:00						

Time (Cairo)	ROOM-A	ROOM-B	ROOM-C	ROOM-D	ROOM-E	COFFEE
13:00- 14:00						LUNCH: L <i>(ON SITE)</i> LUNCH
14:00- 15:30	SESSION-2A: <i>RESEARCH:</i> <i>Advancements in</i> <i>Intelligent Systems for</i> <i>Image Analysis,</i> <i>Cybersecurity, and</i> <i>Educational</i> <i>Technologies</i> 6 PAPERS	SESSION-2B: <i>RESEARCH:</i> <i>Innovative</i> <i>Approaches in AI-</i> <i>Driven Systems for</i> <i>Cybersecurity, Cloud</i> <i>Optimization, and</i> <i>Healthcare</i> <i>Surveillance</i> 6 PAPERS	SESSION-2C: <i>RESEARCH: Deep</i> <i>Reinforcement</i> <i>Learning &</i> <i>Evolutionary</i> <i>Optimization</i> 6 PAPERS	SESSION-2D: <i>RESEARCH:Geospatial</i> <i>Intelligence, Remote</i> <i>Sensing &</i> <i>Environmental Data</i> <i>Analytics</i> 6 PAPERS	SESSION- 2E: RESEARCH: <i>Accessibility,</i> <i>Assistive</i> <i>Technology &</i> <i>Sign Language</i> <i>AI</i> 6 PAPERS	
15:30- 16:00						<i>COFFEE BREAK</i> <i>NETWORKING</i> COFFEE BREAK - NETWORK
16:00- 18:00	SESSION-3A: <i>RESEARCH:</i> <i>Frameworks and</i> <i>Innovations in</i> <i>Governance, AI</i> <i>Maturity, and Decision-</i> <i>Making in Complex</i> <i>Systems</i> 8 PAPERS	SESSION-3B: <i>RESEARCH:</i> <i>Innovations in AI</i> <i>Governance, Security,</i> <i>and Testing</i> <i>Frameworks for Cloud</i> <i>and IoT Systems</i>	SESSION-3C: <i>RESEARCH:</i> <i>Advancements in AI</i> <i>for Financial Risk,</i> <i>Healthcare Detection,</i> <i>and Cloud Data</i> <i>Governance</i> 8 PAPERS	SESSION-3D: <i>RESEARCH:</i> <i>Integrating AI for</i> <i>Fairness, Automation,</i> <i>and Security in Cloud</i> <i>and DevOps</i> <i>Environments</i> 8 PAPERS	SESSION- 3E: RESEARCH: <i>Innovative</i> <i>Approaches in</i> <i>AI for Quality</i> <i>Assurance,</i> <i>Cybersecurity,</i> <i>and Predictive</i> <i>Analytics</i> 8 PAPERS	

Time (Cairo)	ROOM-A	ROOM-B	ROOM-C	ROOM-D	ROOM-E	COFFEE
Wednesday, April 22						
08:00-09:09						
09:30-10:00						
10:00-10:30						
10:30-11:00						NETWORKING COFFEE-BREAK & POSTER SESSION STUDENTS I SESSION (COMPETITION)
11:00-11:30						
11:30-13:00	SESSION-4A: RESEARCH: Renewable Energy, Smart Grids & Environmental Sustainability 6 PAPERS	SESSION-4B: RESEARCH: Robotics, Autonomous Systems & Adaptive Control 6 PAPERS	SESSION-4C: RESEARCH: Machine Learning for Disease Detection & Biomedical Classification (6 PAGES)	SESSION-4D: RESEARCH: Explainable AI (XAI): Methods, Interpretability & Trustworthiness (6 PAGES)	SESSION-4E: RESEARCH: Wireless Communication: NOMA, RSMA & Multi-Access Schemes 6 PAPERS	

Time (Cairo)	ROOM-A	ROOM-B	ROOM-C	ROOM-D	ROOM-E	COFFEE
13:00-14:00						LUNCH: L <i>(ON SITE)</i> LUNCH
14:00-15:30	SESSION-5A: <i>RESEARCH: Computer Vision: Object Detection, Recognition & Surveillance</i> 6 PAPERS	SESSION-5B: <i>RESEARCH: Generative AI, Digital Education & Societal Impact</i> 6 PAPERS	SESSION-5C: <i>RESEARCH: Large Language Models, RAG & Agentic AI Systems</i> (6 PAPERS)	SESSION-5D: <i>RESEARCH: Deepfake, Fake News, Spam & Anti-Phishing Detection</i> (6 PAPERS)	SESSION-5E: RESEARCH: <i>AI for Clinical Decision Support & Healthcare Risk Assessment</i> (6 PAPERS)	
15:30-15:45						<i>COFFEE BREAK</i> NETWORKING COFFEE BREAK - NETWORK
15:45-18:00	SESSION-6A: <i>RESEARCH: Innovations in AI for Secure Identity Verification, Cost Optimization, and Enhanced Analytics</i> 9 PAPERS	SESSION-6B: <i>RESEARCH: Innovative Strategies in AI for Predictive Modeling, Compliance, and System Reliability</i> 9 PAPERS	SESSION-6C: <i>RESEARCH: Advanced Frameworks for Runtime Verification, AI Workloads, and Intelligent System Orchestration</i> 9 PAPERS	SESSION-6D: <i>RESEARCH: AI-Enhanced Governance, Data Reliability, and Intelligent Systems for Modern Applications</i> 9 PAPERS	SESSION-6E: RESEARCH: <i>AI Innovations in Digital Governance, Data Management, and Decision Support Systems</i> 9 PAPERS	

Time (Cairo)	ROOM-A	ROOM-B	ROOM-C	ROOM-D	ROOM-E	COFFEE
Thursday, April 23						
	SESSION-7A: <u>RESEARCH: Agricultural, Food Science & Biological Applications of ML</u> 9 PAPERS	SESSION-7B: <u>RESEARCH: NLP, Sentiment Analysis & Domain-Specific AI Applications</u> 9 PAPERS	SESSION-7C: <u>RESEARCH: Workforce Analytics, Social Impact & Organizational Decision Support</u> 9 PAPERS	SESSION-7D: <u>RESEARCH: AI in Education: Learning Analytics, Prediction & Student Success</u> 9 PAPERS	SESSION-7E: RESEARCH: <u>Machine Learning for Business Intelligence, Finance & Fraud Detection</u> 10 PAPERS	
09:00-11:15						
11:15-11:30						
11:30-12:15						

Tuesday, April 21

Tuesday, April 21 8:30 - 12:00 (Africa/Cairo)

REGISTRATION: REGISTRATION

REGISTRATION

Tuesday, April 21 9:00 - 10:00 (Africa/Cairo)

OPENING CEREMONY: OFFICIAL OPENING CEREMONY

OPENING CEREMONY

Room: MAIN_ROOM

Tuesday, April 21 10:30 - 11:00 (Africa/Cairo)

NETWORKING: COFFEE BREAK & POSTER SESSION

STUDENTS POSTER SESSION (COMPETITION)

Room: COFFEE_ROOM

Tuesday, April 21 11:00 - 11:30 (Africa/Cairo)

KEYNOTE-2: PROFESSOR DR. Wael WAEL BADAWEY, Ph.D., P.Eng.

KEYNOTE-2

Room: MAIN_ROOM

Chair: Lamiaa A. Elrefaei (Benha University, Egypt)

Tuesday, April 21 11:30 - 13:00 (Africa/Cairo)

SESSION-1A: RESEARCH: UAV-Assisted Networking, Deployment Optimization & Aerial Applications

6 PAPERS

Room: ROOM-A

Chair: Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)

11:30 A Preliminary Trajectory-Driven Framework for Queue Length and Control Delay Estimation at Multilane Roundabouts Using Drone Video Analytics

Elawady Mohammed, Khaled Hamad and Lubna Obaid (University of Sharjah, United Arab Emirates)

11:45 Robust Energy-Causal Design for an FSO-Powered UAV SWIPT Relay in Disaster Recovery 

Aya Teguia (De Vinci Higher Education, France); Wafaa Mohammed Ridha Shakir (Al-Furat Al-Awsat Technical University, Iraq); Zeinab Mhanna (Ecole Supérieure d'Ingénieurs Léonard de Vinci, France)



12:00 Digital-Twin and Ray-Casting-Supervised Surrogate Learning for Accelerated Radio-Map Generation and UAV-BS Placement Optimization in mmWave Campus Networks

Karar Hamza Hussein (Al-Furat Al-Awsat Technical University, Iraq); Wasan Kadhim Saad (Engineering Technical College-Najaf, Iraq)

12:15 Saving Lives at Sea: Deep Learning-Based Aerial Detection for Search and Rescue Missions

Mostafa Rizk (Lebanese University, Lebanon); Abbas Rammal (Phoenicia University, Lebanon); Amer Baghdadi (IMT Atlantique, France)

12:30 UAV-Based SDR Signal Warfare: Experimental Constraints and Simulation-Based Evaluation

Yousef AlMahmoud, Nabil Litayem, Mustafa Al Samara and Abdelhak Belhi (Joaan Bin Jassim Academy for Defence Studies, Qatar)



12:45 Robust-APP: Adversarial-Robust Adaptive Path Planning for Noisy and Congested Curved Highway Environments

Ehsan Wadood (Moscow Institute of Physics and Technology, Russia); Umer Mukhtar Andrabi (National Research University Higher School of Economics, Russia); Ilya Voronkov and Alexander Kharlamov (Moscow Institute of Physics and Technology, Russia); Sanjeev Kumar Ojha and Mahi Sharma (Manipal University Jaipur, India)



Tuesday, April 21 11:30 - 13:00 (Africa/Cairo)

SESSION-1B: RESEARCH: IoT-Based Smart Systems & Environmental Monitoring

6 PAPERS

Room: ROOM-B

11:30 Edge-AI Driven Coastal Flood Early Warning System Using IoT-Satellite Data Fusion

Samir Haddad (University of Balamand, Lebanon); Kassem Danach, Sr (Al Maaref University, Lebanon & Chairperson, Lebanon); Jinane Sayah (University of Balamand, Lebanon); Khoulood Eledlebi (Abu Dhabi University, United Arab Emirates); Joseph Merhej (Faculty of Sciences II, Lebanon); Chadi Kallab (Lebanese American University, Lebanon)

11:45 Design and Implementation of IoT-Based Flood Monitoring System with Web-Based Data Repository

Jerry Incierto Teleron (Technological Institute of the Philippines - Quezon City, Philippines)



12:00 Image Processing Model for Pechay and Chinese Pechay Health Detection Using Mobile IoT

Jerry Incierto Teleron (Technological Institute of the Philippines - Quezon City, Philippines)



12:15 IoT-Based Automated Mushroom House with Early-Stage Disease Detection

Shivanshi Sharma, Tanvi Yadav, Kavneet Kaur and Vikas Upadhyaya (NIIT University, India)

12:30 Toward Smart IoT-Enabled Marine Observatories: An Enterprise Architecture Modeling Approach

Noura Mansour (Universidad del País Vasco, Spain); Fadi Dornaika (University of the Basque Country, Spain); Charbel Geryes Aoun (American University of the Middle East, Kuwait)

**12:45 IoT-Enabled Smart Medicine Container for Expiration Safety and Refill Alerts Using Weight and RFID/NFC Sensing**

Karar Hamza Hussein and Mohammed Jalil Mohammed Ali Alhasan (Al-Furat Al-Awsat Technical University, Iraq)

Tuesday, April 21 11:30 - 13:00 (Africa/Cairo)**SESSION-1C: RESEARCH: Edge AI, Federated Learning & Distributed Intelligence Architectures**

6 PAPERS

Room: ROOM-C

Chair: Golnaz Shahtahmassebi (Nottingham Trent University, United Kingdom (Great Britain))

11:30 Digital Sovereignty Beyond the Cloud: An Edge AI Framework for Small Island Developing States

Mohamed Shareef (Nexia Maldives, Maldives)

**11:45 Toward Scalable AllReduce in AI Data Centers: A Cross-Layer Taxonomy and Survey**

Mariam Abdullah and Imtiaz Ahmad (Kuwait University, Kuwait); Sa'ed Abed (Kuwait University & College of Engineering and Petroleum, Kuwait)

12:00 KineticID: A Privacy-Preserving IoT Access Control System Utilizing Markerless Gait Biometrics and Edge Computing

Afeera Firdoose (Middlesex University, United Kingdom (Great Britain)); Mervat Madi (American University of Dubai, United Arab Emirates); Judhi Prasetyo (Middlesex University Dubai, United Arab Emirates)

12:15 Distributed Power Analytics: Leveraging Federated Harris Hawks Optimization for Confidential Energy Prediction

Nader Bakir (Beirut Arab University, Lebanon); Ahmed M Gawish (Arab Open University, Saudi Arabia); Khawla El Hassan (Arab Open University Kuwait, Kuwait); Vadim Pak (Peter the Great Saint Petersburg Polytechnic University, Russia); Marcelle Merhy (Lebanese University, Lebanon); Abdallah El Chakik (Beirut Arab University, Lebanon)

12:30 Micro-Solutions to Mega-Problems: A Design-Thinking Framework for Affordable Offline AI-IoT Access in Low-Resource Contexts

Constantine Andoniou (Abu Dhabi University, United Arab Emirates)

12:45 Resilient Edge Intelligence: Integrating Swarm Logic with Lightweight Agents and Localised SLMs

Antony Lees (BPP University, United Kingdom (Great Britain))



Tuesday, April 21 11:30 - 13:00 (Africa/Cairo)

SESSION-1D: RESEARCH: : Cybersecurity: Threat Detection, Malware & Intrusion Prevention

6 PAPERS

Room: ROOM-D

11:30 *Extracting and Interpreting Emerging Cyber Threats from Dark Web Forums Using Transformer-Based NLP Models*

Moses Mupeta and Lukumba Phiri (University of Zambia, Zambia); Simon Tembo (University of Lusaka, Zambia)

11:45 *Feature-Based Machine Learning for Real-Time Detection of Malicious QR and NFC Content*

Eisa Mohammed Al-mannai, Nabil Litayem, Abdelhak Belhi and Mustafa Al Samara (Joaan Bin Jassim Academy for Defence Studies, Qatar)



12:00 *A lightweight CNN Model for Detecting Industrial Internet of Things (IIoT) Cyber-attacks*

Wahiba Abakker Mohammed Ismaiel and Dhabia Turki (Taif University, Saudi Arabia); Hind Muidh, Salha Mohammed and Muneera Fayhan (University College of Ranyah, Saudi Arabia); Omer Dawood (Prince Sattam Bin Abdulaziz University, Saudi Arabia)



12:15 *A Lightweight Approach to Spam Link Identification Using Automated Domain Reputation Scoring*

Petar Alilović, Davor Cafuta, Danijela Pongrac, Brigitta Cafuta and Ivica Dodig (Zagreb University of Applied Sciences, Croatia)



12:30 *Temporal Generalization of Static Malware Detectors: A Large-Scale Empirical Study*

Sahil Mann, Shahroz Abbas and Ajmery Sultana (Algoma University, Canada)



12:45 *Honeytoken and Honeypot Systems for IoT Networks: Proof of Concept and Implementation using ESP32-S3*

Nabil Litayem (Joaan Bin Jassim Academy for Defence Studies, Qatar)



Tuesday, April 21 11:30 - 13:00 (Africa/Cairo)

SESSION-1E: RESEARCH: Security Frameworks, Critical Infrastructure Protection & Post-Quantum

6 PAPERS

Room: ROOM-E

11:30 Post-Quantum Cryptographic Framework for Critical Infrastructure Protection

Wael Badawy (Egyptain Russian University, Egypt)

11:45 National Cyber Shield Platform: A Scalable Cyber Resilience Engineering Framework for Sustainable Digital Governance Huda J. Nael, Mohammed Almulla and Ali Fenjan (American International University, Kuwait)**12:00 Decentralizing Reputation Scoring Using Blockchain Behavioral Data and Machine Learning**

Md Shakil Ahmed, Shohan Islam Joy and Nabarun Halder (Independent University, Bangladesh, Bangladesh); Ashraful Islam (Independent University Bangladesh & Center for Computational and Data Sciences, Bangladesh); Sanzar A Alam (Independent University, Bangladesh & Center for Computational & Data Sciences, IUB, Bangladesh)

12:15 An Assessment of Cybersecurity Awareness, Competency Levels, Behavior and Practices among Technical Trainees- An Objective Study Sayfuldeen Alsuhaymi and Muhammad Asif Khan (Taibah University, Saudi Arabia)**12:30 Architectural Trust Mediation for Containing IT-OT Escalation in Legacy Critical Infrastructure**Cornelius Chipasha (University of Zambia, Zambia); Simon Tembo (University of Lusaka, Zambia); Shimaponda Mulundumina (University of Zambia, Zambia)**12:45 Latency-Aware Architectural Security for Enterprise-Operational Network Integration in Critical Digital Infrastructure**Cornelius Chipasha and Shimaponda Mulundumina (University of Zambia, Zambia); Simon Tembo (University of Lusaka, Zambia)**Tuesday, April 21 13:00 - 14:00 (Africa/Cairo)****LUNCH: LUNCH (ON SITE)**

LUNCH

Room: COFFEE_ROOM

Tuesday, April 21 14:00 - 15:30 (Africa/Cairo)**SESSION-2A: RESEARCH: Advancements in Intelligent Systems for Image Analysis, Cybersecurity, and Educational Technologies**

6 PAPERS

Room: ROOM-A

Chairs: Salah A. Aly (Fayoum University, Egypt), Shrey Tyagi (Salesforce Inc, USA)

14:00 A Systematic Review of Lightweight Multi-Scale Feature Extraction Models for Medical Image Segmentation

Mina Magdy Kamel, Mai S. Mabrouk and Ahmed F. Elnokrashy (Nile University, Egypt)



14:15 Hierarchical Explainable Risk Scoring for Security Alert Prioritization in Security Operations Centers

Siva Prasad Nandi (Oracle, USA); Rajesh Purushothaman (Zscaler Inc, USA); Sai Manohar Nethi (Intuit, USA); Pavan Nutralapati (Oracle Corp, USA); Naga Satya Praveen Kumar Yadati (Meta, USA); Anil Kumar Thimmapuram (USA)

14:30 Evaluating the Efficacy of Microsoft Teams as an Online Learning Platform: A Case Study in a Philippine State University

Julius Cesar O. Mamaril, Jerry C. Diaz and Clark Kim C. Castro (Pangasinan State University, Philippines)



14:45 Multivariate Deep Temporal Forecasting of Enterprise Cyber Risk Using Vulnerability and Exploitation Intelligence

Pavan Nutralapati (Oracle Corp, USA); Siva Prasad Nandi (Oracle, USA); Naga Satya Praveen Kumar Yadati (Meta, USA); Rajesh Purushothaman (Zscaler Inc, USA); Sai Manohar Nethi (Intuit, USA); Gayathri Balakumar (Capital One, USA)



15:00 Detection and Classification of Aedes Aegypti Mosquito Eggs Using Convolutional Neural Networks and Advanced Computer Vision

Arnel C. Fajardo (Isabela State University, Philippines)

15:15 Improved Energy Demand Forecasting in LGU (Local Government Unit) Using Ensemble Learning as Compared to Single Model Machine Learning

Arnel C. Fajardo, Armald C. Marcos and Genesis Carlo Pangan (Isabela State University, Philippines)

Tuesday, April 21 14:00 - 15:30 (Africa/Cairo)

SESSION-2B: RESEARCH: Innovative Approaches in AI-Driven Systems for Cybersecurity, Cloud Optimization, and Healthcare Surveillance

6 PAPERS

Room: ROOM-B

Chair: Vivek Venkatesan (Vanguard, USA)

14:00 Deep Learning for Intelligent Healthcare Surveillance: Detection and Classification of Patients and Medical Personnel Using YOLO

Mostafa Rizk (Lebanese University, Lebanon); Abbas Rammal (Phoenicia University, Lebanon); Batoul Cheikh (Lebanese University, Lebanon)

14:15 Enhanced AI-Based Disposable Email Detection System

Gasser Sayed (Arab Open University, Egypt); Eid Amery (Amery, Egypt); Hala Abbas (Helwan University & Arab Open University, Egypt)

14:30 Uncertainty-Aware Intelligent Workload Scheduling for Cloud-Native Systems Under Bursty Demand

Venkata Raja Satya Teja Nagavalli, Sapan Bharadwaj Bonala and Sharath Chandra Samineni (USA)

14:45 Beyond Agent Design: A Systematic Framework for MCP Server Runtime Orchestration

Vijayakumar Venganti (Cisco Systems, Inc., USA); Deepak Kole (IEEE Senior Member, USA); Siva Prasad Nandi (Oracle, USA)

15:00 Neural-Heatmap: An Innovative Predictive Data Visualization Technique Using Deep Learning to Strengthen Cybersecurity

Nidadavolu Venkat Durga Sai Siva Vara Prasad Raju (Birla Institute of Technology and Science (BITS), India); Nuruzzaman Faruqui (Daffodil International University, Bangladesh); Moutaz Alazab (Al-Balqa Applied University, Jordan); Olivia-Roxana Alecsioiu (Romania)

15:15 An Agentic Event-Driven Architecture for Compliance Exception Triage in Auditable Regulatory Systems

Krishna Kandi (Convoke, USA); Lavi Kumar (Discover Financial Services, USA); Gouri Sankar Dash (Tata Consultancy Services, USA)



Tuesday, April 21 14:00 - 15:30 (Africa/Cairo)

SESSION-2C: RESEARCH: Deep Reinforcement Learning & Evolutionary Optimization

6 PAPERS

Room: ROOM-C

Chair: Yogeesh Kunigal Gangaiah (Qualitest Group Llc, USA)

14:00 Bayesian Change Point Detection and Its Applications in Artificial Intelligence

Golnaz Shahtahmassebi (Nottingham Trent University, United Kingdom (Great Britain)); Jose Maria Sarabia (University of Cantabria, Spain)

14:15 Entropy-Constrained Hyperheuristics for the Australian Post p-Hub Median Problem

Kassem Danach, Sr (Al Maaref University, Lebanon & Chairperson, Lebanon); Samir Haddad and Jinane Sayah (University of Balamand, Lebanon); Khoulood Eledlebi (Abu Dhabi University, United Arab Emirates); Joseph Merhej (Faculty of Sciences II, Lebanon); Chadi Kallab (Lebanese American University, Lebanon)

14:30 Contrastive Representation Learning for Cross-Project Software Vulnerability Discovery

Rajesh Purushothaman (Zscaler Inc, USA); Naga Satya Praveen Kumar Yadati (Meta, USA); Suresh Dodda (USA); Sai Manohar Nethi (Intuit, USA); Pavan Nutalapati (Oracle Corp, USA); Anil Kumar Thimmapuram (USA)



14:45 Semantic Transformer-Based Detection of Security Misconfigurations in Cloud Infrastructure-as-**Code** 

Naga Satya Praveen Kumar Yadati (Meta, USA); Sai Manohar Nethi (Intuit, USA); Siva Prasad Nandi (Oracle, USA); Rajesh Purushothaman (Zscaler Inc, USA); Pavan Nutalapati (Oracle Corp, USA); Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA)

15:00 Machine Learning Based Analysis of Global Fisheries Production Consumption and Sustainability Trends

Jennie Fernandez (Pangasinan State University, Philippines)

15:15 Comparative Analysis of Organic Matter Dynamics and Coral Reef Condition Using Machine Learning

Jennie Fernandez, Lorena F. Aquino and Nerda C. De Vera (Pangasinan State University, Philippines); Jackie Millama (Pangasinan State University-Binmaley, Philippines); Rosalie Belano and Maria Angelica S. Swin (Pangasinan State University, Philippines)

Tuesday, April 21 14:00 - 15:30 (Africa/Cairo)**SESSION-2D: RESEARCH:Geospatial Intelligence, Remote Sensing & Environmental Data Analytics**

6 PAPERS

Room: ROOM-D

14:00 Energy-Aware GPU Skinning for Real-Time Skeletal Animation Using glTF 2.0

Anas Refaat Sabry and Alaa Adel Zaki (October University for Modern Sciences and Arts (MSA), Egypt); Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)

**14:15 UAV-based Wildlife Detection using Deep Learning and Resource-Constrained Edge Devices**

Mohamad Kassem, Manar Anwer Khaleel Abusirdaneh and Manar Abu Talib (University of Sharjah, United Arab Emirates); Qassim MH Nasir (University Of Sharjah, United Arab Emirates); Fouad Lamghari (Fujairah Research Centre, United Arab Emirates); Mohammad AlShabi (University of Sharjah, United Arab Emirates)

14:30 ARIA: An Agentic Release Intelligence Architecture for Autonomous End-to-End Mobile DevOps - from Build Prediction to Incident Resolution

Satyanarayana Gudimetla (Nike India Technology Private Ltd, India); Suresh Gangula (Nike, Inc, USA); Chandrakanth Challa (Jawaharlal Nehru Technological University Hyderabad, India); R Adinarayana (Andhra University, India); Sudhakar Vunnam (India)

**14:45 AI Based Air Quality Forecasting in the Gulf Region**

Mohammed Abdul Rahim, Hatem Tamimi and Jim O Otieno (Higher Colleges of Technology, United Arab Emirates)

15:00 Comparative Analysis of LSTM, GRU, Hybrid LSTM-GRU, and XGBoost Models for IoT-Based Flood Forecasting Using Multi-Sensor Environmental Data

Jerry Incierto Teleron (Technological Institute of the Philippines - Quezon City, Philippines)



15:15 Multi-Layer Moisture Content Prediction for Oyster Mushroom Substrate Using Bidirectional LSTM

Aileen A Sieras (Technological Institute of the Philippines, Philippines)

Tuesday, April 21 14:00 - 15:30 (Africa/Cairo)

SESSION-2E: RESEARCH: Accessibility, Assistive Technology & Sign Language AI

6 PAPERS

Room: ROOM-E

Chair: Moses Mupeta (University of Zambia, Zambia)

14:00 A Vision-Based Deep Learning Framework for Egyptian Sign Language Recognition Using CNN and VGG-16

Fatma G. El-megharbel and Mennatalla T. Elgamal (MSA University, Egypt); Mazen A. Ebrahim (MSA University, Egypt & University of Greenwich, United Kingdom (Great Britain)); Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)



14:15 Real-Time Egyptian Currency Recognition for Visually Impaired Users

Yehia Samir and Eyad Mohmed (October University for Modern Sciences and Arts (MSA), Egypt); Abdelrahman Ezzeldin Nagib (MSA, Egypt); Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)



14:30 Building a Large-Scale Silver Corpus for Modern Standard Arabic Word Segmentation from Kalimat

Alaaeddine Ramadan (American University of Bahrain, Bahrain); Hussein Ali Awdeh and Mai Khalil (University of Paris 8, France); Omar Saadiyeh (University of Paris 8, Lebanon); Gilles Bernard (University of Paris 8, France); Mohammad Hajjar (Lebanese University, Lebanon)

14:45 3D Alphanumeric Recognition in Arabic Sign Language Using WiLoR-Based 3D Hand Pose Features

Yosr Mansour (Teaching Assistant, Elshorouk Academy, Egypt); Asmaa Elsaid (El Shorouk Aacademy, Egypt); Mariam Alaa Mohamed (El Shorouk Academy, Egypt)



15:00 Attention Modulation of P300 and MMN: A Pilot Study Using a 2-Electrode Oddball Paradigm

Ibrahim Rida Kassem (Lebanese University, Lebanon); Tarek Hourri (Beirut Arab University, Lebanon); Katia Sawaya (Beirut Arab University (BAU), Lebanon)

15:15 Implementation of a Smartphone-Based Multi-sensor Counterfeit Currency Detection

Anupam Raj and Vikas Upadhyaya (NIIT University, India)

Tuesday, April 21 15:30 - 16:00 (Africa/Cairo)

COFEE BREAK & NETWORKING

COFEE BREAK ROOM - NETWORKING

Room: COFFEE_ROOM

Tuesday, April 21 16:00 - 18:00 (Africa/Cairo)

SESSION-3A: RESEARCH: Frameworks and Innovations in Governance, AI Maturity, and Decision-Making in Complex Systems

8 PAPERS

Room: ROOM-A

Chair: Tejas Pravinbhai Patel (Amazon, USA)

16:00 *Who Is Next in a Crowded ED? Design of a Medical Triage Stochastic Decision-Making Game for Exploring Policy Trade-offs*

Adedolapo Kehinde Adebayo (Norfolk State University, USA); Isaac O Osunmakinde (Norfolk State University, USA & None, USA)

16:15 *Governance-Aware Agentic Retrieval-Augmented Generation with Evidence Abstention for Reliable AI Policy Question Answering*

Ashish Hastimal Jain (University of Central Florida, USA); Suhas Reddy Yarrabothu, Nanda Kishore Kande and Dharmateja Reddy Kethireddy (USA)



16:30 *Architecting Multi-Model Agentic AI Systems: A Taxonomy and Reference Architecture for Specialized LLMs in Production Agents*

Sandeep Shivam (Tavant, USA); Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA); Venkat Notalapati (Walmart Global Tech, USA); Vinay R Soni (USA); Vijayakumar Venganti (Cisco Systems, Inc., USA)



16:45 *A Responsible GenAI Maturity Model for Delivery Governance: A Five-Level Framework for PMOs, Agile Coaches, and Engineering Leaders*

Ritesh H Ruparel (CSG International, USA); Sai Mohan Dasari (University of the Cumberland, USA); Vinod Bottu (Microsoft, USA); Vigneshwarr Venkatesan (USA); Suraj Vangala (Charter Communications, USA)



17:00 *Evidence-Based Generative AI for Incident Command Updates: A Practical Method to Prevent Overclaim*

Ritesh H Ruparel (CSG International, USA); Sai Mohan Dasari (University of the Cumberland, USA); Vigneshwarr Venkatesan (USA); Vinod Bottu (Microsoft, USA); Suraj Vangala (Charter Communications, USA)



17:15 *Dependency-Aware Post-Quantum Cryptography Migration Planning: Graph-Based Optimization for Enterprise Infrastructure*

Saurabh Sharma (Cisco Systems, USA); Karthik Pappu (Dakota State University, USA); Ankit Parashar and Navin Suvarna (Cisco Systems, USA)



17:30 *Autonomous AI-Powered Resource Management for Apache Flink on Amazon EKS*

Hari Krishna Pokala (CIGNA, USA); Venkata Pavan Kumar Gummadi (Broadridge, USA)



17:45 *Uncertainty-Aware Deep Neural Networks for Reliable and Selective Decision-Making in Medical Image Classification*

Krishna Kishor Tirupati (USA); Naresh Kumar Methuku (Fidelity Investments, USA); Pradeep Kumar Chilukury and Sai Reddy Busi Reddy (USA)

Tuesday, April 21 16:00 - 18:00 (Africa/Cairo)

SESSION-3B: RESEARCH: Innovations in AI Governance, Security, and Testing Frameworks for Cloud and IoT Systems

Room: ROOM-B

Chairs: Chaitanya Kulkarni (Oracle America Inc, USA), Jay Bharat Mehta (Cleveland State University, Alumni, USA)

16:00 *Future-Proofing Identity Security for Agentic AI Systems: Design, Implementation, and Evaluation of an Identity Fabric*

Karthik Pappu (Dakota State University, USA); Badal Bhushan (I.E.T. M.J.P. Rohilkhand University, India); Nilesh Jaiswal (Electronic Arts, USA)

16:15 *Confidence-Aware Adaptive Neural Computation for Energy-Efficient Deep Learning*

Dharmateja Reddy Kethireddy and Nanda Kishore Kande (USA); Ashish Hastimal Jain (University of Central Florida, USA); Suhas Reddy Yarrabothu (USA)



16:30 *Governance of Generative AI in the Enterprise: Prompt Lifecycle Management and Secure Middleware Design*

Subhash Tatavarthi (Kasmo, USA); Saikrishna Tarakampet (California's Correctional Healthcare Services, USA); Venkatasatyaravikiran Bikkavolu, Raghunath Reddy Koilakonda and Manoj Gudala (USA)

16:45 *A TinyML-Based Out-of-Distribution Security Monitor for Energy-Constrained Industrial and Medical IoT Systems*

Viswanathan Ranganathan (Netflix, USA); Arun Kumar Elengovan (Okta Inc. and IEEE Senior Member, USA); Venkat Nutalapati (Walmart Global Tech, USA); Deepak Kole (IEEE Senior Member, USA); Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA); Nandagopal Seshagiri (Okta Inc., USA)

17:00 *Extending TMMi for FinOps: A Test Maturity Framework for Cloud Cost Governance*

Lakshmi Vidya Peri (TMMi, USA); Deepak Pai (USA); Yogesh S Thanvi (Akamai Technologies, USA)



17:15 *NVMe Validation Maturity: A TMMi-Aligned Framework for Testing Process Improvement*

[Lakshmi Vidya Peri](#) (TMIMI, USA)

17:30 **Agentic Dashboard Generation from Natural Language on Lakehouse Platforms**

[Hari Krishna Pokala](#) (CIGNA, USA)



17:45 **A Secure CI/CD Pipeline using GitHub Actions and Open Policy Agent (OPA) for Kubernetes Applications**

[Hari Krishna Pokala](#) (CIGNA, USA)



Tuesday, April 21 16:00 - 18:00 (Africa/Cairo)

SESSION-3C: RESEARCH: Advancements in AI for Financial Risk, Healthcare Detection, and Cloud Data Governance

8 PAPERS

Room: ROOM-C

Chair: Madhushree Kumari (IEEE Senior Member, USA)

16:00 **Zero-Hop Semantic Retrieval on AWS Lambda Using In-Memory Vector Indexing**

[Mythili Annamalai Sekar](#) (Amazon Inc, USA); [Siva Kumar Chintham](#) (LTM, USA); [Mayilsamy Palanigounder](#) (NTT Data, USA); [Murali Shankar Dulam](#), [Narender Reddy Bitla](#) and [Naga Surya Kamala Dattatreya Pasupuleti](#) (JPMorgan Chase, USA); [Abhirup Mazumder](#) (Amazon, USA); [Anurag Kumar](#) (Cisco Systems, USA)

16:15 **Detection of COPD-like Breathing Patterns from Non-Invasive Pressure and Flow Data Using Machine Learning and Deep Learning**

[Sarvina Mutiya Seidu](#) (Georgia Southern University, USA); [Hayden Wimmer](#) (Georgia Southern University, USA & Institute for Health Logistics and Analytics, USA); [Jie Du](#) (Grand Valley State University, USA)



16:30 **The Yellow Brick Road to AGI: A Detailed Path to Achieving Autonomous General Intelligence with Rapid Testing and Results Management**

[Gregory David Spehar](#) (GiDanc AI LLC, USA); [Akshay Mittal](#) (University of the Cumberland, USA)

16:45 **Governed Agentic Cloud Data Pipelines with MCP Gateways**

[Aswathnarayan Muthukrishnan Kirubakaran](#) (Meta Inc, USA); [Vinoth Punniyamoorthy](#) (JPMorgan Chase, USA); [Akshay Deshpande](#) (Apple, USA); [Adithya Parthasarathy](#) (Newyork University, USA); [Nachiappan Chockalingam](#) (Meta, USA); [Mythili Annamalai Sekar](#) (Amazon Inc, USA); [Naga Surya Kamala Dattatreya Pasupuleti](#) (JPMorgan Chase, USA); [Shiva Kumar Reddy Carimireddy](#) (Fidelity Investments, USA)



17:00 **Transformer-Based Predictive Maintenance for Risk-Aware Instrument Calibration**

[Adithya Parthasarathy](#) (Newyork University, USA); [Aswathnarayan Muthukrishnan Kirubakaran](#) (Meta Inc, USA); [Akshay Deshpande](#) (Apple, USA); [Ram Sekhar Bodala](#) (Amtrak, USA); [Suhas Malempati](#) (The

Cato Corporation, USA); Nachiappan Chockalingam (Meta, USA); Vinoth Punniyamoorthy (JPMorgan Chase, USA); Seema Gangaiah Aarella (Austin College, USA & University of North Texas, USA)



17:15 **OpsAgent: A Governance-Aware Agentic AI Framework for Autonomous Operational Reliability**



Sabitha Muppuri and Chiranjeevisantosh Madugundi (Palo Alto Networks, USA); Ramkinker Singh (Palo Alto Networks, Inc, USA)

17:30 **Artificial Intelligence-Based Default Loan Prediction for Financial Risk Assessment in Digital Lending**



Sandeep Shivam (Tavant, USA)



17:45 **A Comparative Performance Analysis: Vector Search vs Graph Databases for RAG Applications**



Siva Prasad Nandi (Oracle, USA); Vijayakumar Venganti (Cisco Systems, Inc., USA); Vinay R Soni (USA); Venkat Nutalapati (Walmart Global Tech, USA)

Tuesday, April 21 16:00 - 18:00 (Africa/Cairo)

SESSION-3D: RESEARCH: Integrating AI for Fairness, Automation, and Security in Cloud and DevOps Environments

8 PAPERS

Room: ROOM-D

Chairs: Pavan Nutalapati (Oracle Corp, USA), Sandeep Shivam (Tavant Technologies, USA)

16:00 **Behavioral vs. Demographic Predictors of Customer Purchase Frequency: A Multi-Model Analytical Approach**



Nabeel M Sheikh (Oracle America, USA); Taranpreet Kaur (Amazon, USA)

16:15 **SATHOS: Self-Adaptive Trust-Hierarchical Orchestration for Zero-Trust DevSecOps Pipelines**



Nilesh Jaiswal (Electronic Arts, USA); Karthik Pappu (Dakota State University, USA); Yogeesh Kunigal Gangaiah (Qualitest Group LLC, USA)

16:30 **GitOps Driven Automation for Federated Learning Infrastructure**



Vinoth Punniyamoorthy (JPMorgan Chase, USA); Srivenkateswara Reddy Sankiti (Cleveland State University, USA); Nachiappan Chockalingam (Meta, USA); Ram Sekhar Bodala (Amtrak, USA); Aswathnarayan Muthukrishnan Kirubakaran (Meta Inc, USA); Balakrishna Pothineni (JPMorgan Chase, USA); Nitin Saxena (Albertsons Companies, USA); Abhirup Mazumder (Amazon, USA)



16:45 **Carbon-Aware SLO Enforcement for Cloud-Native Microservices Using Adaptive Reliability Policies**



Jagadish Almaipeta, Subhashchandra Babu Madineni and Usha Rani Sheri (USA)



17:00 **AgentQE-Bench: A Reproducible Evaluation Framework for Agentic AI Reliability, Safety, and ROI in CI/CD Pipelines**



Yogeesh Kunigal Gangaiah (Qualitest Group Llc, USA); Lakshmi Vidya Peri (TMMI, USA)



17:15 Policy-Driven Shift-Left Security for Hybrid OpenShift CI/CD Pipelines

Nilesh Jaiswal (Electronic Arts, USA)

17:30 AI-Assisted Bias Detection and Fairness Auditing in Engineering Performance Evaluation Systems: A Responsible AI Governance Framework

Bhaskar Manchuri (USA)

17:45 An Empirical Study of Defect Detectability and Operational Impact of Component vs. End-to-End Testing in Regulated Banking CI/CD Pipelines

Bhaskar Manchuri (USA)

Tuesday, April 21 16:00 - 18:00 (Africa/Cairo)

SESSION-3E: RESEARCH: Innovative Approaches in AI for Quality Assurance, Cybersecurity, and Predictive Analytics

8 PAPERS

Room: ROOM-E

Chairs: Naveen Kolli (Independent Researcher, USA), Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA)

16:00 Shaping QA Coverage with Production Telemetry: Risk-Based Test Selection Under CI Budget Constraints

Yogesh S Thanvi (Akamai Technologies, USA); Lakshmi Vidya Peri (TMMI, USA); Yogeesh Kunigal Gangaiah (Qualitest Group Llc, USA)



16:15 Self-Optimizing Cloud Data Analytics Platforms via Closed-Loop AI Control

Nabeel M Sheikh (Oracle America, USA); Mohan Krishna Mannava (Independent Researcher, USA); Srinivas Gadam (SyntageTech, USA); Taranpreet Kaur (Amazon, USA); Vinil Pasupuleti (IBM, USA); Balaji Shesharao Ingole (IEEE Senior, USA)

16:30 Azure Windows Defender for Enterprise Cybersecurity: Architecture, Automation, and Measured Operational Impact

Jagadish Almaipeta (USA)



16:45 Predicting Heart Failure Outcomes Using Machine Learning Models on Clinical and Laboratory Data

Nabeel M Sheikh (Oracle America, USA); Vansh Agarwal (Amazon, USA); Rucha Deshmukh (Academia, USA); Amit Kumar (Nanit, USA)

17:00 Big Data-Driven Sales Forecasting for Consumer IoT Products: A Machine Learning Approach

Nabeel M Sheikh (Oracle America, USA); Amit Kumar (Nanit, USA); Vansh Agarwal (Amazon, USA)

17:15 Agentic SDLC Automation for ERP Release Readiness: Design Patterns, Governance Guardrails, and Measurable Operational Outcomes

Yogeesh Kunigal Gangaiah (Qualitest Group Llc, USA)

**17:30 Adversarial Attacks on AI Systems and Multi-Layer Defense Mechanisms for User Data Protection**

Naga Satya Praveen Kumar Yadati (Meta, USA); Gayathri Balakumar (Capital One, USA); Ramadas Pulapaka (Constellation Energy, USA); Vinod Bottu (Microsoft, USA); Vidisha Vijay (Birla Institute of Technology and Science, India); Anand Patel (Facebook, USA)

17:45 Safety-Gated Continual Learning for Drift-Aware Anomaly Detection in Real-Time Cyber-Physical Systems

Pradeep Kumar Chilukury, Krishna Kishor Tirupati and Sai Reddy Busi Reddy (USA); Naresh Kumar Methuku (Fidelity Investments, USA)

Wednesday, April 22

Wednesday, April 22 8:00 - 9:09 (Africa/Cairo)

REGISTRATION: REGISTRATION

REGISTRATION

Wednesday, April 22 9:30 - 10:00 (Africa/Cairo)

KEYNOTE-3: DISTINGUISHED KEYNOTE SPEAKER: PROFESSOR DR. MOHAMAD SAWSAN - Westlake University, China

Room: MAIN_ROOM

Wednesday, April 22 10:00 - 10:30 (Africa/Cairo)

KEYNOTE-4: KEYNOTE-4: ENG. SANDEEP SHIVAM, USA

KEYNOTE-4

Room: MAIN_ROOM

Wednesday, April 22 10:30 - 11:00 (Africa/Cairo)

NETWORKING: COFFEE-BREAK & POSTER SESSION

STUDENTS POSTER SESSION (COMPETITION)

Room: COFFEE_ROOM

Wednesday, April 22 11:00 - 11:30 (Africa/Cairo)

KEYNOTE-5: KEYNOTE-5: ENG. TEJAS PATEL - AMAZON, USA

KEYNOTE-5

Room: MAIN_ROOM

Wednesday, April 22 11:30 - 13:00 (Africa/Cairo)

RSESSION-4E: RESEARCH: Wireless Communication: NOMA, RSMA & Multi-Access Schemes

6 PAPERS

Room: ROOM-E

Chair: Salah A. Aly (Fayoum University, Egypt)

11:30 *Short-Packet Communication in CDRT Networks with Imperfect CSI Over Nakagami-m Fading Channels: RSMA or NOMA?*

Kai Wang, Xiaochen Shen, Zhihua Zhang, Liang Shi, Chao He and Xiang Zhang (Defense Innovation Institute)



11:45 *Intelligent and Sample-Efficient Handover in High-Speed Rail Networks Using Deep Reinforcement Learning*

Mariam Abdul-Zahra and Asaad S Daghal (Al-Furat Al-Awsat Technical University, Iraq)

12:00 *Slice-Aware AoI Control for UAV-Assisted 5G and Beyond-5G Waste Hotspot Mapping Using Kernel Fused Density Updates*

Mohammed Jalil Mohammed Ali Alhasan and Karar Hamza Hussein (Al-Furat Al-Awsat Technical University, Iraq)

12:15 *Shielded Primal-Dual Multi-Objective PPO for Energy-Efficient and Fair OFDMA Scheduling in UAV-Enabled 5G/6G Networks*

Mohammed Jalil Mohammed Ali Alhasan, Wafaa Mohammed Ridha Shakir and Asaad S Daghal (Al-Furat Al-Awsat Technical University, Iraq)

12:30 *Dynamic SIC Ordering in Downlink NOMA With User-Dependent CSI Uncertainty*

Zainab Ulhassan, Asaad S Daghal and Wafaa Mohammed Ridha Shakir (Al-Furat Al-Awsat Technical University, Iraq)



12:45 *Robust SIC Design in Downlink NOMA Under User-Dependent CSI Uncertainty*

Zainab Ulhassan, Asaad S Daghal and Wafaa Mohammed Ridha Shakir (Al-Furat Al-Awsat Technical University, Iraq)



Wednesday, April 22 11:30 - 13:00 (Africa/Cairo)

SESSION-4A: RESEARCH:Renewable Energy, Smart Grids & Environmental Sustainability

6 PAPERS

Room: ROOM-A

Chair: Moses Mupeta (University of Zambia, Zambia)

11:30 Random Forest Weight Auditing for Gulf Sustainability Indices: PM2.5 Integration and Structural Heterogeneity in a Six-Country Panel

Nahla Nabil Skaik, Hasan Ali Razzaqi and Mohammad Riyaz Belgaum (Arab Open University - Bahrain, Bahrain); Alyaa Al Aradi (Arab Open University, Bahrain)

**11:45 A Multi-Head Neural Network for Simultaneous Prediction of Perovskite Solar Cell Parameters**

Fatmah AlAwadhi, Fatemah Lari, Amani Albuloushi, Mariam Hussain, Zainab Sadeq, Khaled Chahine and Mohamad Arnaout (American University of the Middle East, Kuwait); Marc AlAtem (American University of Middle East, Kuwait)

**12:00 Uncertainty-Aware Multi-Horizon Wave Energy Assessment Using Probabilistic Deep Learning**

Taha Houda (Prince Mohammad Bin Fahd University, Saudi Arabia); Wafaa Mohammed Ridha Shakir (Al-Furat Al-Awsat Technical University, Iraq); Abdullah Baradaaji (Lebanese International University, Lebanon); Jihad Jaam (Liverpool J. Mores University, United Kingdom (Great Britain))

**12:15 Decentralized Droop Control for Stabilizing DC Bus Voltage in Renewable DC Microgrids**

Ahmed Ibrahim (The Knowledge Hub Universities, Egypt); Ehab Bayoumi (Mechatronics and Robotics Section The British Univer, Egypt); Nathalie Nazih (The British University in Egypt, Egypt)

12:30 Assessing Green, Resilient Supply Chains Through Sustainable Engineering Innovations

Mony Trad (NDU, Lebanon); Atef Harb and Abdallah Kassem (Notre Dame University, Lebanon)

12:45 High-Performance GPU Particle System Editor for VR Environments: Achieving Low-Latency VFX Through Optimized Rendering

Yousef Wael (October University for Modern Sciences and Arts (MSA), Egypt); Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)

Wednesday, April 22 11:30 - 13:00 (Africa/Cairo)

SESSION-4B: RESEARCH: Robotics, Autonomous Systems & Adaptive Control

6 PAPERS

Room: ROOM-B

Chair: Golnaz Shahtahmassebi (Nottingham Trent University, United Kingdom (Great Britain))

11:30 AI-Driven Adaptive Control System for Soft Robotics: Bridging Perception and Actuation in Dynamic Environments

Loso Judijanto (IPOSS, Indonesia); Sri Nurhayati (IKIP Siliwangi, Indonesia)



11:45 Deep Reinforcement Learning-Based Autonomous Thermal Management of Lithium-Ion Batteries: A Comparative Evaluation of DDPG and TD3

Mahmood Alsadoun, Abdulaziz Aljalkhaf, Mohammed Aldakheel, Abdulrahman Al Ali and Taha Houda
(Prince Mohammad Bin Fahd University, Saudi Arabia)

12:00 A survey on formal methods for authentication in self-driving platforms

Muhammad Salman Saeed (ITMO University, St. Petersburg, Russia); Sergey Bezzateev (State University of Aerospace Instrumentati, Russia); Umer Mukhtar Andrabi (National Research University Higher School of Economics, Russia); Ehsan Wadood (Moscow Institute of Physics and Technology, Russia)



12:15 Machine Learning-Based Predictive Framework for OBD-II Vehicle Fault Detection and Maintenance Forecasting

Jerry Incierto Teleron (Technological Institute of the Philippines - Quezon City, Philippines)



12:30 The Integration of Artificial Intelligence Models as a Tool for Justice System Optimization

Magda Beruashvili (Business and Technology University, Georgia)

12:45 Deep Comparative Analysis of Six Machine Learning and Deep Learning Models for OBD-II-Based Predictive Maintenance

Jerry Incierto Teleron (Technological Institute of the Philippines - Quezon City, Philippines)



Wednesday, April 22 11:30 - 13:00 (Africa/Cairo)

SESSION-4C: RESEARCH: Machine Learning for Disease Detection & Biomedical Classification

(6 PAGES)

Room: ROOM-C

Chair: Dua Weraikat (Rochester Institute of Technology, USA)

11:30 A Machine Learning Pipeline for Early Detection of Autism Spectrum in Children

Mariam Mahmoud Dahish and Reem Kadry Montasser (October University for Modern Sciences and Arts (MSA), Egypt); Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)



11:45 Detection-Guided Deep Learning for Segmentation Free Skin Lesion Diagnosis

Hagar Selim and Hadeer Elkady (Arab Academy for Science, Technology, and Maritime Transport, Egypt); Nahla Belal (Arab Academy for Science, Technology, and Maritime Transport & College of Computing and Information Technology, Egypt); Mohamed Khedr (Arab Academy for Science and Technology, Egypt)



12:00 A lightweight Transfer Learning Framework Based on MobileNetV2 for Automated Brain Tumor Classification from MRI Images

Shaimaa Othman and Mohamed Hussein (Teacher at El-Shorouk Academy); [Alaa Hassan](#) (Teacher Assistant at EL-Shorouk Academy); Mrawa Mostafa (Teacher at Innovation University)



12:15 CLIP-DR: Efficient Multi-Grade Diabetic Retinopathy Classification Using SMOTE and Focal Loss with Fine-Tuned Vision Transformers

Nesrine Atitallah (FCS, Arab Open University, Madinah, KSA, Saudi Arabia); [Abuelgasim Abusonoun](#) (Arab Open University, Saudi Arabia); Khoulood Samrouth (Lebanese University, Lebanon); Nader Bakir (Beirut Arab University, Lebanon)

12:30 Early Stage Detection of Chronic Kidney Disease using Machine Learning

Himadri Bahuguna, Shraddha Mandal, Ishaan Bhairab Sensharma, Vikas Upadhyaya and Neha Tiwari (NIIT University, India)

12:45 Multimodal Patient-Level Acute Myeloid Leukemia Subtype Prediction via Single-Cell Cytomorphology and Clinical Features

[Ranya Khaled Elsayah](#) (The knowledge hub universities, Egypt); Gamal A. Ebrahim (Ain Shams University, Egypt); Hani A. Ghali (British University in Egypt (BUE), Egypt)

Wednesday, April 22 11:30 - 13:00 (Africa/Cairo)

SESSION-4D: RESEARCH: Explainable AI (XAI): Methods, Interpretability & Trustworthiness

(6 PAGES)

Room: ROOM-D

Chair: Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)

11:30 Explainable and Calibrated Hierarchical Deep Learning for Thermal Infrared PV Fault Diagnosis



[Khawla Ould Mansour](#) and Yousra Chtouki (Al Akhawayn University, Morocco)



11:45 Stacked Ensemble Learning and Explainable AI for Dust Storm Prediction in Saudi Arabia

[Hager Saleh](#) (South Valley University, Egypt); [Mohammad Wajeih](#) (Midocean University, Macao); Michael Mccann (Atlantic Technological University, Ireland); John G. Breslin (University of Galway, Ireland); Sarah Osama (Minia University, Egypt); Priyanka Verma (University of Galway, Ireland)



12:00 Bayesian Decision Models Under Uncertainty in BPM

Lily Petriashvili (Georgian Technical University, Georgia); Nino Topuria (Georgian-Technical University, Georgia & GTU, Georgia); Tamar Lominadze, Taliko Zhvania and Mzia Kiknadze (Georgian Technical University, Georgia); David Kapanadze (Georgian-Technical University, Georgia)

12:15 The Hidden Complexity of Mental Health: Multi-Entropy Analysis of Response Patterns in Depression Severity Assessment

Ayesha Siddika, Ahnaf Atif Rafi and Maria Jahan Noon (Independent University, Bangladesh, Bangladesh); Md Junayed Hossain (Independent University, Bangladesh & Centre for Computational

and Data Sciences (CCDS), Bangladesh); Ashraful Islam (Independent University Bangladesh & Center for Computational and Data Sciences, Bangladesh); Sanzar A Alam (Independent University, Bangladesh & Center for Computational & Data Sciences, IUB, Bangladesh)

12:30 Explainable AI in Epileptic Seizure Detection

Sakshi Prasad, Bhavika Pawar, Sonali Paliwal and Vikas Upadhyaya (NIIT University, India)

12:45 Explainable AI for Industrial Robotic Fault Diagnostics: Bridging the Trust Gap

Loso Judijanto (IPOSS, Indonesia); Sri Nurhayati (IKIP Siliwangi, Indonesia)



Wednesday, April 22 13:00 - 14:00 (Africa/Cairo)

LUNCH: LUNCH (ON_SITE)

LUNCH

Room: COFFEE_ROOM

Wednesday, April 22 14:00 - 15:30 (Africa/Cairo)

SESSION-5A: RESEARCH: Computer Vision: Object Detection, Recognition & Surveillance

6 PAPERS

Room: ROOM-A

Chair: Devendra Rajput (Accenture, USA)

14:00 Deep Learning-Based Detection of Cluster Bomb Submunitions Using YOLO

Mostafa Rizk (Lebanese University, Lebanon); Sadek Fakih (Lebanese University, Lebanon); Abbas Rammal (Phoenicia University, Lebanon)

14:15 Vision-Based in-Bed Human Pose Estimation Using RGB Images and Pose Estimation Networks



Jana Moatazbellah (October University for Modern Sciences & Arts (MSA), Egypt); Mazen A. Ebrahim (MSA University, Egypt & University of Greenwich, United Kingdom (Great Britain)); Mohamed Nagy (Modern Science and Arts University, Egypt); Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)



14:30 A Systematic Benchmarking of XAI Methods for Weapon Recognition for Video Surveillance

Haya AlMadhloum AlSuwaidi, Fatih Kurugollu and Abbes Amira (University of Sharjah, United Arab Emirates); Muhammad Shahroz Nadeem (University of Suffolk, United Kingdom (Great Britain))



14:45 Early Detection of Acute Myeloid Leukemia (AML) Using YOLOv12 Deep Learning Model

Enas Emad (Cairo University, Egypt); Salah A. Aly (Fayoum University, Egypt); Mayar Moner (Cairo University, Egypt)



15:00 Cross-Domain Vulnerability Analysis of YOLOv5 to Physical Adversarial Patches in Safety-Critical Object Detection

Mashari AlRowaili, Abdelhak Belhi, Mustafa Al Samara and Nabil Litayem (Joaan Bin Jassim Academy for Defence Studies, Qatar)



15:15 AI-Powered Financial Fraud Detection Using Machine Learning: A Multi-Algorithm Approach

Ekereuke Udoh (QA Higher Education, United Kingdom (Great Britain))

Wednesday, April 22 14:00 - 15:30 (Africa/Cairo)

SESSION-5B: RESEARCH:Generative AI, Digital Education & Societal Impact

6 PAPERS

Room: ROOM-B

Chair: Shyalendar Reddy Allala (Global Atlantic Financial Company, USA)

14:00 Transforming Environmental Literacy with AI: The AIEC Model for University-Industry Sustainability Alignment

Constantine Andoniou (Abu Dhabi University, United Arab Emirates)



14:15 The impact of data analytics on decision making Evidence based practices

Mahmoud Allahham (Amman Arab University, Jordan); Bashar Khaled Almagharbeh (Amman Arab University Amman, Jordan); Jawad Hasan AlKhateeb and Taha Houda (Prince Mohammad Bin Fahd University, Saudi Arabia); Jihad Jaam (Liverpool J. Mores University, United Kingdom (Great Britain))

14:30 AI Governance for Assessment and Academic Integrity in Higher Education An Institutional Illustrative Case

Omar Al-Jarrah (Vice President for Planning and Development & CIO, Kuwait); AWS Ismail Abueid (Arab Open University - KUWAIT, Kuwait)



14:45 The Effect of Generative AI Use on Programming Self-Efficacy in Computer Engineering Students



A.M. Mutawa, Shouq Alsubaihi and Sai Sruthi (Kuwait University, Kuwait)

15:00 The Role of Generative AI in Audiovisual Production: Opportunities, Limitations and Emerging Workflows

Sónia Almeida Ferreira, Sr (Polytechnic of Viseu, Portugal & School of Education, CI&DEI, Portugal); Vanessa Reis Campos (School of Education, Portugal)

15:15 Topic Modeling of Student Perspectives on Generative AI for Academic Research Writing

Lauro Aspiras (Quirino State University, Philippines)



Wednesday, April 22 14:00 - 15:30 (Africa/Cairo)

SESSION-5C: RESEARCH: Large Language Models, RAG & Agentic AI Systems

(6 PAPERS)

Room: ROOM-C

Chair: Yogeesh Kunigal Gangaiah (Qualitest Group Llc, USA)

14:00 *Domain-Specific Legal AI Assistant with Retrieval-Augmented Generation(RAG)*

Ekereuke Udoh (QA Higher Education, United Kingdom (Great Britain))

14:15 *Prompt-as-Heuristic: A Hyperheuristic Framework for Meta-Reasoning in Large Language Models*



Kassem Danach, Sr (Al Maaref University, Lebanon & Chairperson, Lebanon); Samir Haddad and Jinane Sayah (University of Balamand, Lebanon); Khoulood Eledlebi (Abu Dhabi University, United Arab Emirates); Joseph Merhej (Faculty of Sciences II, Lebanon); Chadi Kallab (Lebanese American University, Lebanon)



14:30 *Federated Large Language Models for Distributed Cyber Attack Classification*

Shahroz Abbas and Ajmery Sultana (Algoma University, Canada)



14:45 *RAG-Enhanced Healthcare Integration LLM Framework*

Omer Dawood (Prince Sattam Bin Abdulaziz University, Saudi Arabia); Hamada Nayel (Benha University, Egypt & Prince Sattam Bin Abdulaziz University, Saudi Arabia); Wahiba Abakker Mohammed Ismaiel (Taif University, Saudi Arabia); Yousra Elhakeem (SUST, Sudan)

15:00 *An Agentic Approach to Faithful and Transparent Islamic Question Answering*

Hind Al-owais, Ibrahim Hashem and Ashraf Elnagar (University of Sharjah, United Arab Emirates)

15:15 *Multimodal and Vision Language Few Shot Learning: A Survey*

Amna Salim Humaid Alkinde (University of Sharjah, United Arab Emirates)

Wednesday, April 22 14:00 - 15:30 (Africa/Cairo)

SESSION-5D: RESEARCH: Deepfake, Fake News, Spam & Anti-Phishing Detection

(6 PAPERS)

Room: ROOM-D

Chair: Salah A. Aly (Fayoum University, Egypt)

14:00 *Cross-Dialect Arabic Audio Deepfake Detection via One-Class Learning and Outlier Exposure*

Mariam Khalid AlAli, Ayad Turkey and Saad Harous (University of Sharjah, United Arab Emirates)

14:15 *AI-Based Detection of Synthetic Video and Audio Media*

Omar Assem, Zahwa K. Kesa and Eman E. Hamd (October University for Modern Sciences and Arts (MSA), Egypt); Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)



14:30 PRNU-CNN Fusion for Video Deepfake Detection

Waleed Al-Ali and Ahmed Bouridane (University of Sharjah, United Arab Emirates); Kais Belwafi (University of Shrhjah, United Arab Emirates)

14:45 A Hybrid Transformer Architecture for Phishing Email Detection Using Lexical and Statistical Features

Omar Abdelrahim (Arab Academy for Science, Technology and Maritime Transport); Radwa Fathalla (Arab Academy for Science, Technology and Maritime Transport, Egypt); Yasser El-Sonbaty (Arab Academy for Science, Technology, and Maritime Transport, Egypt)

15:00 Multi-Modal Fake News Classification: A Hybrid Deep Learning Approach

Mina Eskander (Arab Academy for Science, Technology, and Maritime Transport, Egypt); Mostafa Magdy Karam (Arab Acadmey for Science, Technology, and Maritime Transport, Egypt); Nahla Belal (Arab Academy for Science, Technology, and Maritime Transport & College of Computing and Information Technology, Egypt); Mohamed Khedr (Arab Academy for Science and Technology, Egypt); Ahmed Hamdy Abdallah and Ahmed Karem Farouk (Ahram Canadian university, Egypt)

15:15 Spam Email Detection Using a Custom Multi-Head DistilBERT

Wadaq Tarek (Arap Open University, Egypt); Eid Amery (Amery, Egypt); Hala Abbas (Helwan University & Arab Open University, Egypt)

Wednesday, April 22 14:00 - 15:30 (Africa/Cairo)

SESSION-5E: RESEARCH: AI for Clinical Decision Support & Healthcare Risk Assessment

(6 PAPERS)

Room: ROOM-E

Chair: Siva Rama Krishna Varma Bayyavarapu (Senior IEEE Member, USA)

14:00 Emergency Department Triage Classification: A Comparative Study with Explainable AI for Small-Data Environments

Ahmad Saad and Taha Houda (Prince Mohammad Bin Fahd University, Saudi Arabia); Saad Houda (King Faisal Specialist Hospital and Research Center, Saudi Arabia)

14:15 Lightweight Carbon-Conscious Machine Learning Framework for Lung Cancer Risk Assessment

Hifsah Nasir (HITEC University, Pakistan); Wajahat Riaz (Pak-Austria Fachhochschule - Institute of Applied Sciences and Technology, Pakistan); Ihtisham Ali (Pak-Austria Fachhochschule Institute of Applied Sciences and Technology, Pakistan); Khalil Khan (Qassim University, Saudi Arabia); Maqbool Khan (American University of Bahrain, Bahrain)



14:30 AI-Driven Pseudo-3D Mesh Reconstruction from 2D Fetal Ultrasound for Accessible Prenatal Visualization

Omar Mohamed Waheed and Karim Mohamed Abo Alazm (October University for Modern Sciences and Arts (MSA), Egypt); Mazen A. Ebrahim (MSA University, Egypt & University of Greenwich, United Kingdom (Great Britain)); Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)



14:45 Integrating Artificial Intelligence into Healthcare: Predictive Analytics for Early and Equitable Diagnosis

Ekereuke Udoh (QA Higher Education, United Kingdom (Great Britain))

15:00 Beyond Benchmark Accuracy: Toward Clinically Trustworthy AI for Biomedical Signals,



Jinan Charafeddine, Dr. Jinan (Engineering School Léonard de Vinci - ESILV, France); Taha Houda (Prince Mohammad Bin Fahd University, Saudi Arabia); Nada Salman (Université Paris-Saclay, France); Jihad Jaam (Liverpool J. Mores University, United Kingdom (Great Britain))



15:15 Harnessing Deep Computational Intelligence for Smart Healthcare Decision-Making



Dina Darwish, Reham Adel Ali, Nehal Khaled Ahmed and Soha Mohamed Abd Allah (Ahram Canadian University, Egypt)



Wednesday, April 22 15:30 - 15:45 (Africa/Cairo)

COFEE BREAK & NETWORKING

COFEE BREAK ROOM - NETWORKING

Room: COFFEE_ROOM

Wednesday, April 22 15:45 - 18:00 (Africa/Cairo)

SESSION-6A: RESEARCH: Innovations in AI for Secure Identity Verification, Cost Optimization, and Enhanced Analytics

9 PAPERS

Room: ROOM-A

Chairs: Salah A. Aly (Fayoum University, Egypt), Tejas Pravinbhai Patel (Amazon, USA)

15:45 TBIVL: A Unified Identity Verification Layer for Secure Agent-to-Service Context Exchange

Siva Rama Krishna Varma Bayyavarapu (Senior IEEE Member, USA); Siva Prasad Nandi (Oracle, USA); Srinivasateja Songa (The Home Depot, USA)

16:00 Autonomous Workload Right-Sizing for Multi-Cloud Cost Optimization



Jay Bharat Mehta (Cleveland State University, Alumni, USA)

16:15 Autonomous Data Agents for End-to-End Analytics Pipelines: From Data Discovery to Insight Generation



Naveen Kolli (Independent Researcher, USA); Santhosh Kumar Veeramalla, Abhishek Palakurthi and Ram Prasad Belde (USA)

**16:30 Responsible AI Horizons: A Multi-Dimensional Framework for Verifiable AI Behavioral Assessment with Cryptographic Verification**

Gregory David Spehar (GiDanc AI LLC, USA); Akshay Mittal (University of the Cumberland, USA)

16:45 Architecture Patterns for Microservices in AI Ecosystems

Shravya Bussari (Hcltech, USA); Naveen Kumar Puppala (Optum, USA); Akshay Mittal (University of the Cumberland, USA)

17:00 Serverless Architectures for Real-Time AI Model Deployment

Shravya Bussari (Hcltech, USA); Akshay Mittal (University of the Cumberland, USA); Akhilesh Bollam (Amazon, USA)

17:15 AI-Enabled Remote Proctoring: Architecture and Implementation for Digital Examinations

Vishal Shukla (Harvard Business School, USA & LTIMindtree, USA); Surbhi Ghai and Aatam Prakash Sharma (Lovely Professional University, India); Ashwath Suresh Hegde and Lalit Rupani (USA); Pradnya Harshad Desai (Salesforce, USA)

17:30 Self-Supervised Cross-Modal Representation Learning for Fine-Grained Image-Text Knowledge Fusion

Sai Reddy Busi Reddy and Pradeep Kumar Chilukury (USA); Naresh Kumar Methuku (Fidelity Investments, USA); Krishna Kishor Tirupati (USA)

17:45 A Survey on Recent Federated Learning Techniques in Healthcare: Challenges and Future Trends

Nader Bakir (Beirut Arab University, Lebanon); Khoulood Samrouth (Lebanese University, Lebanon); Prathibha Prasad (Ajman University, United Arab Emirates); Syed Arif Ali (Heriot-Watt University, United Kingdom (Great Britain)); Rami M Khoder (Beirut Arab University, Lebanon)

Wednesday, April 22 15:45 - 18:00 (Africa/Cairo)

SESSION-6B: RESEARCH: Innovative Strategies in AI for Predictive Modeling, Compliance, and System Reliability

9 PAPERS

Room: ROOM-B

Chairs: Venkata Seetarama Raju Dantuluri (Capital One, USA), Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA)

15:45 Vector Databases Under Realistic Workloads: Filtered Search, Churn, and Warm-Restart Behavior

Vinay R Soni and Neha Agrawal (USA); Gajendra Babu Thokala (IEEE Independent Researcher); Amit Kumar Padhy (University of Illinois Urbana-Champaign, USA & Adobe Inc., USA); Chandrashekhar Medicherla (Salesforce Inc, USA); Tejas Pravinbhai Patel (Amazon, USA)

**16:00 Causal Inference Models for Workforce Attrition Prediction using Hybrid Workday-HCM and External Behavioral Signals**

Naveen Kolli (Independent Researcher, USA); Santhosh Kumar Veeramalla, Abhishek Palakurthi and Ram Prasad Belde (USA)



16:15 Artificial Intelligence for Integrated Pain and Delirium Prediction in Cardiac Care: A Joint Modeling Trajectories

Jafar A. Wreikat (Al-Ahliyya Amman University, Jordan); Dua Weraikat (Rochester Institute of Technology, USA); Manal Al Satari (Al-Ahliyya Amman University, Jordan)



16:30 A Failure Taxonomy and Trace-Driven Debugging Toolkit for Reliable Agentic LLM Systems

Nikita Kothari (Salesforce Inc, USA); Ankush Agarwal (OpenAI Inc, USA); Varun Joshi (Amazon Development Center, USA); Lav Kumar (Salesforce Inc, USA)

16:45 Compliance-Aware Generative AI for Life Insurance Document Synthesis: A Reference Architecture

Harpreet Singh Siddhu (University of Illinois, Urbana Champaign, USA); Karthik Pappu (Dakota State University, USA); Yogesh S Thanvi (Akamai Technologies, USA)



17:00 AI in Requirements Engineering, Software Design, and Software Architecture: A Systematic Mapping Study (2020-2026)

Ritesh H Ruparel (CSG International, USA); Vigneshwarr Venkatesan (USA); Suraj Vangala (Charter Communications, USA); Vinod Bottu (Microsoft, USA); Sai Mohan Dasari (University of the Cumberlands, USA)



17:15 Student Dropout Prediction in East African Secondary Schools: Performance, Interpretability, and Fairness

Deepak Pai (USA); Karthik Pappu (Dakota State University, USA); Yogesh S Thanvi (Akamai Technologies, USA)



17:30 Reusable, Secure, and Compliance-First CI/CD Pipeline Architectures for Regulated Enterprise Environments

Sameena Begam Savukath Ali (Southern New Hampshire University, USA); Saikrishna Tarakampet (California's Correctional Healthcare Services, USA); Subhash Tatavarthi (Kasmo, USA)



17:45 AdaptiRAG: Adaptive Retrieval-Augmented Generation with Co-Trained Domain-Specific Fine-Tuned LLMs for Question Answering

Vijayakumar Venganti (Cisco Systems, Inc., USA); Seetaram Rao Rayarao (JP Morgan, USA)

Wednesday, April 22 15:45 - 18:00 (Africa/Cairo)

SESSION-6C: RESEARCH:Advanced Frameworks for Runtime Verification, AI Workloads, and Intelligent System Orchestration

9 PAPERS

Room: ROOM-C

Chairs: Yogeesh Kunigal Gangaiah (Qualitest Group Llc, USA), Vasanth rao Jadav (EPAM Systems, USA)

15:45 SOP-Driven Knowledge Base Construction for Intelligent Insurance Workflow Orchestration

Shyalendar Reddy Allala (Global Atlantic Financial Company, USA); Vinil Pasupuleti (IBM, USA); Shrey Tyagi (Salesforce Inc, USA); Srinivasateja Songa (The Home Depot, USA); Siva Rama Krishna Varma Bayyavarapu (Senior IEEE Member, USA)

16:00 Native MCP Server in Oracle Autonomous AI Database- Enabling High Performance Agentic AI Workloads

Chaitanya Kulkarni (Oracle America Inc, USA); Chandrashekhar Medicherla (Salesforce Inc, USA); Tejas Pravinbhai Patel (Amazon, USA); Bharadwaj Vulugundam (Oracle, USA); Rajesh Purushothaman (Zscaler Inc, USA); Isan Sahoo (IEEE Senior Member, USA); Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA); Rakesh Keshava (IEEE Senior Member, USA)

16:15 Performance Analysis of AI-Powered Analytics in Oracle Autonomous AI Lakehouse- Vector Search and Data Lake Acceleration on Apache Iceberg

Chaitanya Kulkarni (Oracle America Inc, USA); Chandrashekhar Medicherla (Salesforce Inc, USA); Tejas Pravinbhai Patel (Amazon, USA); Bharadwaj Vulugundam (Oracle, USA); Rajesh Purushothaman (Zscaler Inc, USA); Isan Sahoo (IEEE Senior Member, USA); Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA); Rakesh Keshava (IEEE Senior Member, USA)

16:30 GraphEvoPR: Reviewing Pull Requests with Path-based Network Portrait divergence and Tests

Vasim Shaikh (ADP, USA); Vijay Walunj (Teladoc Health, USA); Amarnath Hanumantharaya (USA)

16:45 Agentic AI-Driven Workflow Orchestration in Loan Trading Platforms: A Microservices and Hybrid Cloud Architecture Perspective

Vinay R Soni and Girish A Gajwani (USA)



17:00 Runtime Verification of Cyber-Physical Systems Using Weighted Deep Sequence Models

Naresh Kumar Methuku (Fidelity Investments, USA); Krishna Kishor Tirupati, Sai Reddy Busi Reddy and Pradeep Kumar Chilukury (USA)



17:15 DynaGNN-3D: Dynamic Graph Neural Networks with Velocity-Aware Edge Reconfiguration for Real-Time LiDAR-Based 3D Object Detection in Autonomous Vehicles

Vijayakumar Venganti (Cisco Systems, Inc., USA); Seetaram Rao Rayarao (JP Morgan, USA)

17:30 Trust-Aware Runtime Verification for Autonomous LLM Agent Systems

Tejas Pravinbhai Patel (Amazon, USA)

17:45 MambaMon: Linear-Time State Space Models for Large-Scale Distributed System Monitoring

Tejas Pravinbhai Patel (Amazon, USA); Chandrashekhar Medicherla (Salesforce Inc, USA); Arun Kumar Elengovan (Okta Inc. and IEEE Senior Member, USA); Chaitanya Kulkarni (Oracle America Inc, USA)

Wednesday, April 22 15:45 - 18:00 (Africa/Cairo)

SESSION-6D: RESEARCH: AI-Enhanced Governance, Data Reliability, and Intelligent Systems for Modern Applications

9 PAPERS

Room: ROOM-D

Chairs: Varshitha Manjunath (Lasell University, USA), Karthik Pappu (Dakota State University, USA)

15:45 *Autonomous Policy Enforcement Using AI Agents in Digital Governance Systems*

Tejas Pravinbhai Patel (Amazon, USA); Chaitanya Kulkarni (Oracle America Inc, USA)

16:00 *Feature Platforms as Reliability Systems: A Taxonomy, Control Matrix, and SLI/SLO Playbook*

Vinay R Soni and Neha Agrawal (USA); Siva Rama Krishna Varma Bayyavarapu (Senior IEEE Member, USA); Sandeep Shivam (Tavant, USA); Gajendra Babu Thokala (IEEE Independent Researcher, USA)



16:15 *Risk-Aware Human-AI Collaboration Framework for High-Stakes Decision Systems*

Tejas Pravinbhai Patel (Amazon, USA); Madhushree Kumari (IEEE Senior Member, USA); Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA)

16:30 *Data-Grounded LLM Framework for Intelligent Travel Planning*

Hayam Reda Seireg (El Shorouk Academy, Egypt); Amr Omar (Elshorouk Academy, Egypt); Fares Ashraf Eraky, Omar Mahmoud AbdelQader, Youssef Atef Mousa, Fabio Ibrahim Sedik and Tasneem Abdelrahman (El Shorouk Academy, Egypt)

16:45 *Performance-Driven Database Distribution: Evaluating Replication, Partitioning, and Sharding for OLAP Using an Adaptive Cross-Platform Framework*

Siva Prasad Nandi (Oracle, USA); Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA); Viswanathan Ranganathan (Netflix, USA); Vivek Venkatesan (Vanguard, USA); Vijayakumar Venganti (Cisco Systems, Inc., USA)

17:00 *Evaluating Vitalsource Bookshelf As A Digital Library Platform In A Philippine State University*



Julius Cesar O. Mamaril (Pangasinan State University, Philippines)



17:15 *LLM-Augmented Mutation Testing: Intelligent Generation and Triage of Mutants*

Sanjay Bajaj (Owens-minor, USA); Venkata Seetarama Raju Dantuluri (Capital One, USA); Devendra Rajput (Accenture, USA); Anil Kolhe (www.yodlee.com, USA)

17:30 *AI-Driven Big Data Analytics and Data Integration on Cloud Platforms*

Balakrishna Pothineni and Prema K Veerapaneni (JPMorgan Chase, USA); Ravi Kiran Kodali (Cognizant Technology Solutions, USA); Bikesh Kumar (Apple Inc., USA); Durgaraman Maruthavanan (TCS, USA); Mayilsamy Palanigounder (NTT Data, USA); Sumit Saha (East West Bank, USA); Kabilan Kannan (AMD, USA)

17:45 *Evaluating Demand-Side Flexibility in District Heating Substations via Offline Reinforcement Learning*

Gideon Mbiydenyuy (University of Borås, Sweden)

Wednesday, April 22 15:45 - 18:00 (Africa/Cairo)

SESSION-6E: RESEARCH: AI Innovations in Digital Governance, Data Management, and Decision Support Systems

9 PAPERS

Room: ROOM-E

Chairs: Rohit Nimmala (Bank of America, USA), Vivek Venkatesan (Vanguard, USA)

15:45 *Knowledge Graph-Enhanced LLMs for Unified Climate-Aware Risk Management in Banking: The Cognitive Bank Architecture*

Rohit Nimmala (Bank of America, USA); Gajendra Babu Thokala (IEEE Independent Researcher); Jagrut Nimmala (Lowes Companies, USA); Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA)



16:00 *Deep Learning NER Pipeline for Automated Basel III / IFRS 9 Risk Parameter Extraction from Climate Narratives*

Rohit Nimmala (Bank of America, USA); Jagrut Nimmala (Lowes Companies, USA); Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA)



16:15 *Safe and Policy-Compliant Multi-Agent Orchestration for Enterprise AI*

Vinil Pasupuleti (IBM, USA); Shyalendar Reddy Allala (Global Atlantic Financial Company, USA); Siva Rama Krishna Varma Bayyavarapu (Senior IEEE Member, USA); Shrey Tyagi (Salesforce Inc, USA)

16:30 *Real-Time Colon Cancer Detection Using Deep Learning: A Comparative Analysis of EfficientNet Architectures*

Sumaiya Thaseen (DMU, United Arab Emirates); Vanitha M (VIT vellore, India); Geetha Mohan (Future Education University College, United Arab Emirates); Benita Kalistus Jimci Veronica (Curtin University Dubai, United Arab Emirates)

16:45 *TASH-Net: A Novel Deep CNN for Brain Tumor Classification from MRI Images*

Hussein Alkatout and Taha Houda (Prince Mohammad Bin Fahd University, Saudi Arabia); Muhammad Attique Khan (Prince Mohammad Bin Fahd University, Al-Khobar, KSA, Saudi Arabia); Jinan Charafeddine, Dr. Jinan (Engineering School Léonard de Vinci - ESILV, France); Jihad Jaam (Liverpool J. Mores University, United Kingdom (Great Britain))

17:00 *From AI Drag to AI Boost: A Preceptorship Framework for Developing Software Engineering Expertise in the Agentic Era*

Satyanarayana Gudimetla (Nike India Technology Private Ltd, India); Suresh Gangula (Nike, Inc, USA); Chandrakanth Challa (Jawaharlal Nehru Technological University Hyderabad, India); R Adinarayana (Andhra University, India); Sudhakar Vunnam (India)



17:15 *Informative Feature-Based Data Imputation: Exploring Smart Video Surveillance as a Case Study*

Mahmoud M Eid (Egyptian Chinese University (ECU), Egypt); Kamal EIDahshan (Egypt); Abdelatif H. Aboualy and Hassan Mistareehi (Murray State University, USA)

17:30 *Detecting Glioma, Meningioma, and Pituitary Tumors, and Normal Brain Tissues based on Yolov11 and Yolov8 Deep Learning Models*

Ahmd M Taha (Egypt University of Informatics, Egypt); Salah A. Aly (Fayoum University, Egypt)

17:45 GAPI: Graph-Aware Prefill Interleaving for Knowledge Graph-Augmented LLM Inference in Explainable Education Policy Analysis

Milan Parikh (IETE, SCRS, IEEE Senior Member, USA & Cytel, USA)

Thursday, April 23

Thursday, April 23 9:00 - 11:15 (Africa/Cairo)

SESSION-7A: RESEARCH:Agricultural, Food Science & Biological Applications of ML

9 PAPERS

Room: ROOM-A

Chair: Tamer M Nassef (October University of Modern Sciences and Arts (MSA), Egypt)

9:00 Development of a Web-Based Interactive 3D Orbit and Ground-Track Visualization Tool for Orbital Mechanics Education

Raed Kafafy (HCT, United Arab Emirates); Ossama Abdelkhalik (Iowa State University, USA); Mohamed Okasha (United Arab Emirates University, United Arab Emirates)

9:15 LLM-Assisted Software Development in Aerospace Engineering Education: A Structured Workflow

Raed Kafafy (HCT, United Arab Emirates); Mohamed Okasha (United Arab Emirates University, United Arab Emirates); Ossama Abdelkhalik (Iowa State University, USA)

9:30 Performance Evaluation of a ResNet50 CNN for Corn Leaf Disease Classification

Rhowel M. Dellosa (Pangasinan State University, Philippines)



9:45 Analysis of Physicochemical Factors Affecting the Quality of Cacao Wine-Based Beverages using Random Forest Algorithm

Martina Penalber (Isabela State University, Philippines)

10:00 A Machine Learning Driven Analysis of Employment Outcomes and Curriculum Relevance in a State University in the Philippines vs. Global Graduate Employability

Liezl Joy L. Quilang (Isabela State University, Philippines)



10:15 Cost-Aware LLM Orchestration via Contextual Bandit Learning

Vasanth rao Jadav (EPAM Systems, USA); Shalini Sudarsan (Kindercare Learning Companies, USA); Vikram Isanaka (UBS, USA)



10:30 Predictors of Licensure Examination Performance Among BEEd Graduates Toward a Random Forest Predictive Framework

Jocelyn Sagun- De Vera (Pangasinan State University, Philippines)



10:45 Audit-Ready Fraud Detection: Aligning Gradient Boosting and SHAP with GDPR and SOX Compliance

Deepak Pai (USA); Karthik Pappu (Dakota State University, USA); Yogeesh Kunigal Gangaiah (Qualitest Group Llc, USA)



11:00 TowerTrace: Scalable Detection of Telecom Infrastructure via Multimodal VLMs

Mohamed Tharwat (ESLSCA University, Egypt); Ayman Gaber, Mohamed Abdelhakeem and Islam Ashraf (Vodafone Egypt, Egypt); Magy Hossam (Eslsca, Egypt)

Thursday, April 23 9:00 - 11:15 (Africa/Cairo)

SESSION-7B: RESEARCH:NLP, Sentiment Analysis & Domain-Specific AI Applications

9 PAPERS

Room: ROOM-B

Chair: Davor Cafuta (Zagreb University of Applied Sciences, Croatia)

9:00 Automated Pancreas Segmentation in 2D CT Scans: A Comparison of Prompt-Based Segment Anything Model (SAM) and Classical U-Net

Mina Awad, Ahmed F. Elnokrashy and Mai S. Mabrouk (Nile University, Egypt)



9:15 Towards Automated Grading of Hand Drawings: A Dataset and Classification Framework

Alaa Abdulfattah Sayed and Khaled F. Hussain (Assiut University, Egypt); Majid Askar (Assistant Lecturer in Assiut University, Egypt)



9:30 Implementation of Sentiment Prescriptive Analytics in a Web-Based Library User Satisfaction System Using Deep Learning

Jerry Incierto Teleron (Technological Institute of the Philippines - Quezon City, Philippines)



9:45 Toward Trustworthy Audit Automation: Explainable Meta-Learning for Financial Fraud Detection

Nancy Chendeb (De Vinci Higher Education, France & De Vinci Research Center, Paris, France); Antonin Chevalier kremper (Devinci Higher education, France); Abdallah Mustapha Ziade (Lebaneese University, Zaca International, Lebanon); Malak Mohamad Daher (Jinan University Tripoli, Lebanon & Zaca International, Lebanon)

10:00 Swin Transformer Architectures for Breast Histopathology Image Classification in Cancer Detection

Mahmoud Adel Nour, Mai S. Mabrouk and Ahmed F. Elnokrashy (Nile University, Egypt)



10:15 A Smart Mobile System Using Deep Learning for Business Tourism Demand Prediction in**Palawan** 

Jerry Incierto Teleron (Technological Institute of the Philippines - Quezon City, Philippines)

**10:30 Prediction of Digital Literacy in Agricultural and Rural Areas Using Machine Learning to Enhance Digital Literacy Education**

Celeste Mercado (Pangasinan State University, Philippines)

10:45 Predicting College Students' Academic Performance Using Machine Learning

Julius Cesar O. Mamaril, Rhowel M. Dellosa, Celeste Mercado and Jennie Fernandez (Pangasinan State University, Philippines); Jerry I. Teleron (Technological Institute of the Philippines - Quezon City, Philippines); Marlon Dela pena Hernandez (Bulacan State University, Philippines); Walter C. Nocasa, Lorena B. Echalar, Teresita D. Mamaril, Kristine May D. Casibang, Jeffrey A De Asis, Christian S Dela Cruz, Jumar Baratang, Vemma Mae G. Olivar, Nova E. Arquillano, Gloria M. Ducut, Wilbert O. Rosario, Rocky P. Manalo, Honelly Mae S. Cascolan, Cristina L. Javier, Juan Primitivo P. Petrola, Marlon L. Perado and Roselyn Villacorte (Pangasinan State University, Philippines)

**11:00 Adaptive Multi-Modal Routing for Cost-Aware Presentation Summarization**

Vasanth rao Jadav (EPAM Systems, USA); Anshul Garg (Amazon, USA); Vikram Isanaka (UBS, USA)

**Thursday, April 23 9:00 - 11:15 (Africa/Cairo)****SESSION-7C: RESEARCH:Workforce Analytics, Social Impact & Organizational Decision Support**

9 PAPERS

Room: ROOM-C

9:00 A multilingual GAT-based model for product search in an E-commerce platform

Cherine Mohamed (British University in Egypt, Egypt); Abeer Hamdy (The British University in Egypt, Egypt)

9:15 AI Food Scanner - AI-Powered Dish Nutrition Scanner App

Ekereuke Udoh (QA Higher Education, United Kingdom (Great Britain))

9:30 Data-Driven Analysis of Factors Influencing Employee Performance in the Lebanese Construction Industry

Fawziah Kassar (Lebanese University, Lebanon); Nader Bakir (Beirut Arab University, Lebanon); Khoulood Samrouth (Lebanese University, Lebanon); Layla Akkoumeh (Jinan University, Lebanon); Nesrine Atitallah (FCS, Arab Open University, Madinah, KSA, Saudi Arabia); Hussein Krayani (Peter the Great St.Petersburg Polytechnic University, Russia); Lina Kemayel (Lebanese University, Lebanon)

9:45 A Hybrid CNN-Vision Transformer Architecture for Enhanced Document Understanding in Higher Education Archiving

Yousuf Nasser Al Husaini and Mohammed Abdullah Salim Al Husaini (Arab Open University Oman, Oman); Rahma Mohammed Al Kharusi and Abdul Rahman Al Abri (Arab Open University, Oman)

10:00 Securing APIs in Government Clouds and Runtime Fabric Using FIPS-Enabled MuleSoft

Venkata Pavan Kumar Gummadi (Broadridge, USA); Lakshmi Sujatha Chilamkurthi (Cigna, USA);
Srikanth Kavuri (Iconsoft, USA)

**10:15 Service Level Objective (SLO) Observability with Splunk and Dynatrace in Microservices**

Venkata Pavan Kumar Gummadi (Broadridge, USA); Lakshmi Sujatha Chilamkurthi (Cigna, USA);
Srikanth Kavuri (Iconsoft, USA)

**10:30 A Random Forest and Logistic Regression Analysis of Faculty Development Programs, Satisfaction, and Career Mobility in a State University**

Annalene Grace E. Co (Quirino State University, Philippines)

**10:45 A Random Forest-Based Analysis of Factors Affecting the Income of Carpenters in Selected Barangays of Kayapa, Nueva Vizcaya, Philippines**

Ayson D. Paclit (Nueva Vizcaya State University, Philippines)

**11:00 CostAgent: Self-Improving Autonomous LLM-Based Orchestration for Cost-Optimal Cloud Data Processing at Scale**

Naga Krishna Reddy Muppidi, Veera Ravindra Divi and Sneha Gullapalli (USA); Sruthi Rachamalla (Southern Illinois University, Carbondale, USA); Subhash Tatavarthi (Kasmo, USA)



Thursday, April 23 9:00 - 11:15 (Africa/Cairo)

SESSION-7D: RESEARCH:AI in Education: Learning Analytics, Prediction & Student Success

9 PAPERS

Room: ROOM-D

Chair: Tejas Pravinbhai Patel (Amazon, USA)

9:00 Synchronized 360°VR Classroom Using Locally Hosted Open Infrastructure and Meta Quest 3 Headsets

Brigitta Cafuta, Danijela Pongrac and Lidija Tepes Golubic (Zagreb University of Applied Sciences, Croatia)

**9:15 PMFSNet from Scratch: Evaluating Lightweight Backbone Efficiency for Medical Image Segmentation**

Mina Magdy Kamel, Ahmed F. Elnokrashy and Mai S. Mabrouk (Nile University, Egypt)

**9:30 Design and Evaluation of a Fairness-Aware Student Success Prediction System Using Learning Analytics Data (OULAD)**

Ekereuke Udoh (QA Higher Education, United Kingdom (Great Britain)); Betty Nkem Okwedadi (Ulster University, United Kingdom (Great Britain)); Edita Gashi (QA Higher Education, United Kingdom (Great Britain))

9:45 An Optimized Ressource Allocation and Recommendation Algorithm for Classroom Occupancy Management: A Case Study at Alioune Diop University of Bambey

Youssou Kassé (Université Alioune Diop, Senegal); Fatoumata Baldé (Université Alioune Diop de Bambey, Senegal); Ndeye Penda Mbaye (Université Alioune DIOP de Bambey, Senegal)

10:00 Comparative Study of Machine Learning Algorithms for Predictive Analytics in Web Applications

Raju Dandigam (Navan, USA); Chirag Agrawal (Amazon, USA)

10:15 An Immersive Virtual Tour Framework for Educational Institutions Using 360° VR and AI-Based Chatbot

Mahmoud Rehan Morgan (Elshorouk Academy, Egypt); Alaa M Nagy (HICIT, El-Shorouk Academy, Egypt); Ahmed Radi (Technical Research Center, Egypt)

10:30 Application of Machine Learning to Predict Student Academic Outcomes in Higher Education

Armando D. Junio (Pangasinan State University, Philippines)

10:45 DocSync: Agentic Documentation Maintenance via Critic-Guided Reflexion

Sidhesh Badrinarayan (Google, USA); Adithya Parthasarathy (Newyork University, USA)

11:00 Distributed Platform Architecture and API-Led Integration

Lakshmi Sujatha Chilamkurthi (Cigna, USA); Venkata Pavan Kumar Gummadi (Broadridge, USA); Srikanth Kavuri (Iconsoft, USA)



Thursday, April 23 9:00 - 11:30 (Africa/Cairo)

SESSION-7E: RESEARCH: Machine Learning for Business Intelligence, Finance & Fraud Detection

10 PAPERS

Room: ROOM-E

Chair: Salah A. Aly (Fayoum University, Egypt)

9:00 Behavioral Customer Segmentation for Fixed Broadband: A Machine Learning Approach

Mohamed Tharwat (ESLSCA University, Egypt); Eshraq Saeed Awwad (Vodafone Egypt, Egypt)

9:15 Defensive Intelligent Traffic Management using Secure AI Intersection Control, Resilient Sensor Fusion, and Crisis-Aware Autonomous Routing

Wael Badawy (Egyptain Russian University, Egypt)

9:30 (RDSF-SSL) Robust Dynamic graph and Soft-label Fusion for Semi-Supervised Learning

Abdullah Baradaaji (Lebanese International University, Lebanon); Fadi Dornaika (University of the Basque Country, Spain); Taha Houda (Prince Mohammad Bin Fahd University, Saudi Arabia); Jihad Jaam (Liverpool J. Mores University, United Kingdom (Great Britain))



9:45 Efficient Voice Identification System Utilizing Wav2Vec2.0 and HuBERT Based on the Quran Reciters Dataset

Aly Moustafa (faculty of Computers and Information, Helwan University); [Salah A. Aly](#) (Fayoum University, Egypt)

10:00 Improving Safety Deep Learning-Based Vulnerability Detection

Samir Haddad (University of Balamand, Lebanon); Kassem Hamze (Islamic University of Lebanon, Lebanon); Jinane Sayah (University of Balamand, Lebanon); [Rafi Srayoui](#) (Lebanese University, Lebanon); Joseph Merhej (Faculty of Sciences II, Lebanon); Chadi Kallab (Lebanese American University, Lebanon)



10:15 AI-Driven Detection of Misclassified Imports: A Machine Learning and LangChain-Based RAG Approach for Customs Fraud

Adnane El Amrani, Aya Ismaili and Yousra Chtouki (Al Akhawayn University, Morocco); Hind Lamharhar (High-Tech, Morocco)



10:30 Cooperative Evolutionary Hyper-Heuristics with Informed Energy Constraints for Fair and Robust Spiking Neural Networks

Ali Sajwani and Ayad Turkey (University of Sharjah, United Arab Emirates); Nasser Saber (La Trobe University, Australia)

10:45 A Hybrid Asset Scoring Framework Combining Deterministic Quantitative Screening with RAG-Informed LLM Qualitative Evaluation for Portfolio Universe Reduction

Joude Azzam, Saber Elsayed and Saad Harous (University of Sharjah, United Arab Emirates)

11:00 An Intelligent Decision Support Framework for Relevant and Responsive Capacity-Building in Start-Up Cooperatives

[Dahlee S. Pascua](#) (Isabela State University, Philippines)



11:15 Quantifying Attribute-Level Elliptic Curve Cryptography Encryption Costs with Decision Modelling for Data-Intensive Applications

[Anxhela Baraj](#) (Faculty of Engineering, University of Rijeka and Canadian Institute of Technology, Albania); Jonatan Lerga (Faculty of Engineering, University of Rijeka)



Thursday, April 23 11:15 - 12:15 (Africa/Cairo)

INDUSTRIAL WORKSHOP FROM USA: Building Trusted AI-Driven Infrastructure

INDUSTRIAL WORKSHOP - USA

Room: **MAIN_ROOM**

Chair: Lakshmi Vidya Peri (TMIMI, USA)

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