CAISN'26

2ND EDITION · HYBRID CONFERENCE

International Conference on Artificial Intelligence, Security and Networking

CAISN 2026

26 – 27 November 2026

Al Akhawayn University Ifrane, Morocco

In-person & Online Day 1 in Ifrane · Day 2 in virtual rooms

PROGRAM

CONFERENCE BOOK

AI Applications & Intelligent Systems | Cybersecurity & Privacy | Computer Vision | Robotics & Autonomous Systems | Mobile Wireless Networks

ORGANIZED BY

جامعة الأخوين
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AL AKHAWAYN UNIVERSITY

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Welcome to CAISN'26

Following the first edition, held at Ibn Tofail University in Kenitra in December 2024, the International Conference on Artificial Intelligence, Security and Networking (CAISN) returns for its second edition. CAISN 2026 is co-organized by Al Akhawayn University in Ifrane and Ibn Tofail University, and takes place on 26 and 27 November 2026 in Ifrane, Morocco.

The conference brings together researchers, academics and industry professionals to present and discuss recent advances in artificial intelligence, cybersecurity, networking, wireless communications and information systems, from theoretical foundations to practical applications. CAISN 2026 is held in a hybrid format. The first day takes place in person in Ifrane, with the official opening, three keynote speeches and six technical sessions. The second day is fully online, with seven virtual sessions open to participants from Morocco and abroad.

72	13	3	2
Accepted papers	Technical sessions	Keynote speakers	Days, hybrid format

CONFERENCE TRACKS

- AI Applications and Intelligent Systems
- CyberSecurity and Privacy
- Computer Vision
- Robotics and Autonomous Systems
- Mobile Wireless Networks

Keynote speakers



Prof. Wadii BOULILA
Prince Sultan University, Riyadh, Saudi Arabia

Title: Beyond the AI Hype: Turning Intelligence into Real-World Impact

Abstract

Artificial intelligence is reshaping what machines can perceive, generate, and accomplish. Yet translating these capabilities into reliable solutions that deliver lasting value remains a defining challenge. What separates an impressive prototype from an intelligent system that people trust and organizations adopt? This keynote examines the gap between research breakthroughs and real-world impact, revealing how problem definition, scientific rigor, system integration, and organizational ownership shape the path to successful deployment. The talk introduces RISE—Real need, Intelligent foundation, System translation, and Ecosystem scaling—as a framework for connecting scientific innovation with practical value. Drawing on research and development experiences at the Robotics and Internet-of-Things Laboratory (RIOTU Lab), it presents examples spanning intelligent sensing, visual perception, and autonomous systems. These experiences illustrate why deployment considerations must inform research from the outset, with evaluation extending beyond predictive accuracy to encompass reliability, latency, cost, and adoption under real operating conditions. The keynote explores how small language models and agentic edge intelligence can bring perception, reasoning, and action closer to where they are needed. It identifies research opportunities and deployment challenges arising from limited computation, connectivity, and energy, alongside requirements for privacy and safety.



Prof. Anas ABOU EL KALAM
ENSA, Cadi Ayyad University, Marrakech, Morocco

Title : AI-OrBAC: A Formal Organization-Based Authorization Model for Secure Delegation in Agentic AI Systems

Abstract

The rapid emergence of Agentic Artificial Intelligence (AI) is transforming the way digital systems operate, enabling autonomous agents to reason, interact with external services, use tools, and delegate tasks to other agents. However, these capabilities introduce significant security challenges, particularly regarding access control, authorization, delegation of privileges, and accountability. This talk presents AI-OrBAC, a formal extension of the Organization-Based Access Control (Or-BAC) model designed to address the specific security requirements of agentic AI systems. The proposed framework introduces a structured approach to managing delegation between principals and autonomous agents, ensuring that delegated permissions remain constrained by the authority of the delegating entity.

Particular attention is given to preventing privilege escalation through multi-hop delegation, preserving instruction provenance, mitigating confused-deputy and indirect prompt-injection attacks, and enabling dynamic revocation of delegated permissions. The presentation will also discuss the formal foundations of AI-OrBAC, including its non-amplification axiom and containment theorem, as well as its implementation and evaluation through a multi-agent procurement scenario using stratified Datalog and Answer Set Programming (ASP).

Ultimately, this talk explores how formal access-control models can contribute to building more secure, accountable, and trustworthy Agentic AI ecosystems, where autonomy and delegation are governed by enforceable security policies.



Prof. Jawad AHMAD
Prince Mohammad Bin Fahd University, Saudi Arabia

Title: Breaking Image Correlation in Encryption: New Methods for Secure Images

Abstract

Abstract: Digital images have become essential to healthcare, cloud platforms, intelligent transportation, critical infrastructure, and everyday communication. Yet their rich visual content and strong relationships among neighbouring pixels create distinct security challenges. Conventional encryption concepts remain important, but image data requires specialised protection against statistical and structural information leakage. This keynote examines why image correlation matters in cybersecurity and how it can influence the confidentiality of sensitive visual information. It will discuss the security implications for applications such as medical imaging, cloud storage, smart cities, autonomous systems, and defence. The session will also outline the key criteria used to evaluate secure image encryption, including randomness, resistance to statistical analysis, and protection against visual pattern disclosure. Rather than focusing only on cryptographic algorithms, the talk places image security within the wider context of AI-enabled services, edge computing, and data privacy. It offers an accessible perspective on emerging directions, challenges, and opportunities in protecting visual data in an increasingly connected digital world.

Welcome Message from the CAISN'26 Chairs

The International Conference on Artificial Intelligence, Security and Networking – CAISN'26

Distinguished guests, esteemed colleagues, researchers, and technology innovators,

It is our great pleasure to welcome you to Ifrane, Morocco, for the **2nd International Conference on Artificial Intelligence, Security and Networking (CAISN'26)**, taking place on November 26–27, 2026, at Al Akhawayn University. Following the successful inaugural edition hosted by Ibn Tofail University in Kenitra in 2024, we are delighted to bring together an international community of researchers, academics, engineers, and industry professionals for another enriching scientific gathering.

CAISN'26 embraces this vision by bringing together contributions across a broad spectrum of emerging research areas, including AI applications and intelligent systems, cybersecurity and privacy, computer vision, robotics and autonomous systems, mobile and wireless networks, and advanced information technologies. We believe that addressing tomorrow's challenges requires more than advances within individual disciplines; it requires collaboration, shared expertise, and innovative thinking across research communities.

Building on the foundations established during its first edition, CAISN'26 represents an important step in strengthening international scientific collaboration and promoting research excellence. The conference provides an opportunity for established researchers and emerging scholars alike to present their findings, exchange perspectives, challenge existing approaches, and explore new directions in intelligent and secure digital systems. We are particularly pleased to support the dissemination of high-quality scientific contributions through **Springer's Lecture Notes in Networks and Systems (LNNS)** proceedings, subject to the publisher's requirements and applicable publication conditions.

The realization of CAISN'26 would not have been possible without the commitment and dedication of many individuals and institutions. We extend our sincere appreciation to **Al Akhawayn University and Ibn Tofail University** for their collaboration and institutional support in organizing this international event. We are also grateful to AfreTec for its valuable support, as well as to our academic and institutional partners who have contributed to making this edition possible.

Our special thanks go to the members of the Honorary Committee, Scientific Committee, Technical Program Committee, organizing committees, track chairs, and reviewers. Their expertise, dedication, and commitment to a rigorous peer-review process are fundamental to maintaining the scientific quality and integrity of the conference. We equally acknowledge the efforts of our local organizing team and volunteers, whose work behind the scenes ensures the smooth preparation and delivery of this event.

We are also honored to welcome our distinguished keynote speakers and invited contributors. Their expertise and perspectives will undoubtedly enrich the scientific program, stimulate thought-provoking discussions, and provide valuable insights into the evolving landscape of artificial intelligence, security, and networking. Beyond the scientific presentations, we hope that CAISN'26 will serve as a space for building lasting academic relationships, initiating collaborative research projects, strengthening university–industry partnerships, and encouraging the next generation of scientists and innovators. We particularly encourage young researchers and doctoral students to take full advantage of this opportunity to engage with the international scientific community and contribute to shaping the future of technology.

Finally, we invite you to enjoy the unique atmosphere of Ifrane and the hospitality of Al Akhawayn University. May these two days be filled with inspiring discussions, new perspectives, fruitful exchanges, and promising collaborations.

We wish all participants a stimulating, productive, and memorable CAISN'26. Together, let us contribute to building a future where intelligent technologies, secure infrastructures, and connected systems create meaningful opportunities for science and society.

Welcome to CAISN'26, and welcome to Ifrane, Morocco!

Adil EL MAKRANI and Youssef CHETIOUI

Conference Chairs

Idriss MOUMEN, Ahmed KHALLAAYOUN, Amine AMAR and Jalal LAASSIRI

Conference Co-Chairs

Program at a Glance

Day 1 – Thursday, 26 November 2026

In person • Al Akhawayn University in Ifrane

08h30 – 16h00	Registration		
09h30 – 10h30	**Welcome Reception & Official Opening** Dr. BENSAID Amine, President of Al Akhawayn University in Ifrane – Morocco Dr. BOUJIHA Tarik, Vice-President for Digital Transformation at Ibn Tofail University Dr. CHETIOUI Youssef, Assistant Vice-President for Academic Research at of Al Akhawayn University Dr. KHALLAAYOUN Ahmed, AUI , Ifrane – Morocco Dr. EL MAKRANI Adil, FS, UIT Kenitra – Morocco Dr. MOUMEN Idriss, ESTC, UH2C, Casablanca – Morocco Auditorium of Building 16		
10h30 – 11h00	Coffee Break		
11h00 – 12h30	KEYNOTE SPEAKER 1 **Prof. Wadii BOULILA** Prince Sultan University, Riyadh, Saudi Arabia *"Beyond the AI Hype: Turning Intelligence into Real-World Impact"* KEYNOTE SPEAKER 2 **Prof. Anas ABOU EL KALAM** ENSA, Cadi Ayyad University, Marrakech, Morocco *"AI-driven Framework for enhancing Security and Quality of Service in Avionics Systems"* Auditorium of Building 16 Session Chairs: Dr. ABOUAOMAR Amine, Dr. MOUMEN Idriss		
12h30 – 14h00	Lunch Break		
14h00 – 15h30	SESSION L1 **Cybersecurity, Network Intrusion & Privacy** Room 1 : Room 109 Building 08B	SESSION L2 **Computer Vision & Medical Image Analysis** Room 2 : Auditorium Building 08B	SESSION L3 **AI Applications, Forecasting & Decision Support** Room 3 : Student Lounge Building 14
15h30 – 16h15	KEYNOTE SPEAKER 3 **Prof. Jawad AHMAD** Prince Mohammad Bin Fahd University, Saudi Arabia *"Breaking Image Correlation in Encryption: New Methods for Secure Images"* Auditorium of Building 16 Session Chairs: Dr. ASSOUDI Hicham, Dr. LAASSIRI Jalal		
16h15 – 16h45	Coffee Break		

16h45 – 18h00	Poster Session		
16h45 – 18h00	SESSION L4 Modeling, Optimization & Intelligent Infrastructure Room 1 : Room 109 Building 08B	SESSION L5 Educational AI, Trustworthy LLMs & Human-Centered Systems Room 2 : Auditorium Building 08B	SESSION L6 Vision, Document Intelligence & Predictive Modeling Room 3 : Student Lounge Building 14
19h00 – 22h00	Gala Dinner		

Day 2 – Friday, 27 November 2026

Online • Virtual Rooms 1–3

10h00 – 11h30	ONLINE SESSION V1 Cybersecurity, Privacy & Intrusion Detection Virtual Room 1	ONLINE SESSION V2 Computer Vision & Medical AI Virtual Room 2	ONLINE SESSION V3 AI Applications, NLP & Intelligent Systems Virtual Room 3
	ONLINE SESSION V4 IoT, Smart Cities & Wireless Networks Virtual Room 1	ONLINE SESSION V5 Cloud, Distributed Systems & Digital Twins Virtual Room 2	ONLINE SESSION V6 Educational Technologies & Intelligent Learning Virtual Room 3
	ONLINE SESSION V7 Modeling, Simulation & Optimization Virtual Room 1		
	Closing Ceremony		

Technical Sessions

GUIDELINES FOR PRESENTERS

- Each paper is allocated 15 minutes.
- In-person presenters should be in their room 10 minutes before the start of their session and give their slides to the session chair.
- Online presenters should join their virtual room 10 minutes early and check their camera, microphone and screen sharing.

Day 1 – Thursday, 26 November 2026

In-person sessions • Rooms 1–3

14h00 – 15h30 (GMT)	SESSION L1 Cybersecurity, Network Intrusion & Privacy Room 109, Building 08B
Session Chairs	Dr. LAASSIRI Jalal, FS, UIT Kenitra – Morocco Dr. EL KAMILI Mohamed, ESTC, UH2C, Casablanca – Morocco
14:00 – 14:15	ID 1 **CausalShift: A Taxonomy, Magnitude and Identifiability Diagnostic for Causal Change in Network Traffic Under Attack** Authors: Mehdi Ennaciri, Rafik Taouil
14:15 – 14:30	ID 20 **Toward Adaptive Conflict Detection and Resolution: Bridging Controller Personalization and Airspace Context in AI-Enhanced Air Traffic Control** Authors: Jihane Belhou, Khadija Louzaoui, Khalid Benlhachmi
14:30 – 14:45	ID 19 **Before the Model: Validating Labels, Points of Interest and Trace Windows in Deep-Learning Side-Channel Analysis of ML-KEM** Authors: El Mahdi El Aimnai, Adil El Makrani
14:45 – 15:00	ID 80 **Leave-One-Context-Out: Revealing Hidden Generalization Failures in VANET Misbehavior Detection** Authors: Amina Boualoul, Hamid Bennis, Khalid Salhi
15:00 – 15:15	ID 134 **When Recovery Misleads: LLM Verification of Adversarial Android Malware Evasion** Authors: Ayoub Mendoubi, Abdeslam El Fergougui
15:15 – 15:30	ID 156 **Post-Decryption Regional Integrity and Delegated Verification for AES-GCM** Authors: Hamza Taimi and Abderrahmane Laraqui

14h00 – 15h30 (GMT)	SESSION L2 **Computer Vision & Medical Image Analysis** Auditorium Building 08B
Session Chairs	Dr. LAZAAR Mohamed, ENSIAS, M5U, Rabat – Morocco Dr. SADIQ Abdelalim, FS, UIT Kenitra – Morocco
14:00 – 14:15	ID 24 **A Compact Attention-CNN for Spatial Image Steganalysis** Authors: Youssef Taouil and El Bachir Ameur
14:15 – 14:30	ID 35 **Neuro-Morphological Texture Segmentation with Pretrained Deep Features and Automatic Region-Count Estimation** Authors: Khalid Salhi, Hamza Khalloufi and Hamid Bennis
14:30 – 14:45	ID 47 **A Robust Hybrid Texture Representation for Multi-Instance Finger Knuckle Print Recognition** Authors: Latifa Hajjar and Youssef FAKHRI
14:45 – 15:00	ID 52 **Exploring CNNs, Transformers and State Space Models for 3D Medical Image Registration: A Comprehensive Study** Authors: Hanae Mahmoudi, Jaouad Tagnamas, Hiba Ramadan, Jamal Riffi, Hamid Tairi
15:00 – 15:15	ID 138 **A Cross-Shaped-Window Encoder of Retinal Fundus Images for I-JEPA via Scatter-Fill Masking** Authors: Khalil Laatiris, Ikram Elazami, Najlae Jellouli, Nawfal Elmoukhi, Ibtissam Essadik
15:15 – 15:30	ID 194 **Evaluating the Impact of Nonlinear Registration on Longitudinal PET Analysis in a Rodent Stroke Model** Authors: Haytham Ziani, El Mostafa Kalmoun, Zohaib Atif, Hyuk-Sang Kwon

14h00 – 15h30 (GMT)	SESSION L3 **AI Applications, Forecasting & Decision Support** Student Lounge Building 14
Session Chairs	Dr. Eda Orhun - AUI-SBA & American University in Bulgaria Dr. FAKHRI Youssef, FS, UIT Kenitra – Morocco
14:00 – 14:15	ID 27 **The Impact of the Russia & Ukraine Conflict on Brent Price Forecasting Using a Weighted Hybrid Model** Authors: Hicham Boussatta Hicham, Marouane CHIHAB, Younes CHIHAB
14:15 – 14:30	ID 120 **A Multi-Agent AI Decision-Support Framework for Reservoir Flood Operations: The 2026 Oued El Makhazine Crisis, Morocco** Authors: Marouan El Aoumrani, Abdelaaziz El Hibaoui
14:30 – 14:45	ID 144 **Predictive Modeling of Daily Earthquake Counts Based on Planetary and Cometary Distances** Authors: Tarik El Moudden, Bahaa Eddine Elbaghazaoui, Mohamed Amnai, Ali Choukri
14:45 – 15:00	ID 167 **Predicting Mutual Fund Outperformance Using Machine Learning: Evidence from Morocco's Mutual Fund Market** Authors: Hamza Bourjila, Zakaria Ezzarzari, Samir Aguenaou, Jawad Abrache, Amine Bourjila
15:00 – 15:15	ID 169 **Cross-Disorder Prediction of Depression and PTSD Using Machine Learning: A Comparative Study with Statistical Robustness Analysis** Authors: Mouna Kettani, Salma Samine, and Fouad Abbou
15:15 – 15:30	ID 202 **AI Architectures for Flight-Delay Prediction: A Systematic Review** Authors: Zineb Alarda, Yousra Chtouki, Ilyasse Belarbi, and Chayma El Mellouki

16h45 – 18h00 (GMT)	SESSION L4 **Modeling, Optimization & Intelligent Infrastructure** Room 109, Building 08B
Session Chairs	Dr. EL AZAMI Ikram, FS, UIT Kenitra – Morocco Dr. AMEUR El Bachir, FS, UIT Kenitra – Morocco
16:45 – 17:00	ID 8 **Adaptive Large Neighborhood Search for Pharmaceutical Distribution Routing: A Case Study in Tangier, Morocco** Authors: Ilias Chakour, Otman Abdoun
17:00 – 17:15	ID 2 **Toward Causal Signature Discovery in Network Intrusion Detection: Integrating PC Algorithm and LLM** Authors: Mehdi Ennaciri, Rafik Taouil
17:15 – 17:30	ID 33 **Locally Optimal, Globally Inefficient: A Hierarchical Energy Governance Model for Battery-Powered IoT Gateways** Authors: Sahar Benjebbour, Tarik Houichime, Salma Azzouzi, My El Hassan Charaf
17:30 – 17:45	ID 153 **A Controlled Data-Ablation Framework for Extreme-Event Detection in Data-Scarce Hydrology** Authors: Insaf Faraj, Sara Riahi, Mohamed Nabil Saidi
17:45 – 18:00	ID 205 **Burst-Aware Load Balancing: Reducing Tail Wait Time in a Linux-Modeled Multicore Scheduler** Authors: Hiba Amcharat, Amine Abouaomar, Houda Chakiri

16h45 – 18h00 (GMT)	SESSION L5 **Educational AI, Trustworthy LLMs & Human-Centered Systems** Auditorium Building 08B
Session Chairs	Dr. LARAQUI Abderrahmane, EST, UIT Kenitra – Morocco Dr. ASSOUDI Hicham, AUI, Ifrane – Morocco
16:45 – 17:00	ID 185 **The Tool Teaches Back: A Reflexive Approach for Studying Individual Creators in the Age of AI, Illustrated** Authors: William Shibuya, Imane Halloul
17:00 – 17:15	ID 187 **Designing AI Tutors for Independent Professional Judgment** Authors: Jeong-Ha Yim, Oumaima Ounjar
17:15 – 17:30	ID 188 **A Controlled Study of Identity Masking, Multimodal Fusion, and Temporal Generalization in Financial Reinforcement Learning** Authors: Salaheddine Boumazough, El Mostafa Kalmoun
17:30 – 17:45	ID 193 **Does Diagnostic Prompting Improve LLM Advice on Workplace Performance Problems?** Authors: Jeong-Ha Yim, Oumaima Ounjar, Najlaa El Azhar
17:45 – 18:00	ID 197 **Assessing Verification of LLM Explanations: A Seeded-Error Pilot in Undergraduate Linear Algebra** Authors: Yasser Lemghari, El Mostafa Kalmoun

16h30 – 17h45 (GMT)	SESSION L6 **Vision, Document Intelligence & Predictive Modeling** Student Lounge Building 14
Session Chairs	Dr. EL MADANI EL ALAMI Yasser, ENSIAS, M5U, Rabat – Morocco Dr. VAN LIERDE Veronique, AUI, Ifrane – Morocco
16:45 – 17:00	ID 191 **Transfer of Bilevel-Learned Optical Flow Regularization Across Frames, Sequences and Noise** Authors: Hajar Ouaghad, Chaymae Nachaf, El Mostafa Kalmoun
17:00 – 17:15	ID 204 **MADoc-HTR: Handwritten Text Recognition for Moroccan Legal Official Documents Using Kraken** Authors: Niema Alaoui Mdaghri, Houda Chakiri, Hicham Assoudi, Salma Madoud, Hiba Barroug, Nada El Yassenasni
17:15 – 17:30	ID 242 **Drone Based Surveillance for Road and Speed Infraction Monitoring** Authors: Hamza Saidi Hassani Alaoui, Adil El Makrani, Ahmed Khallaayoun and Idriss Moumen
17:30 – 17:45	ID 209 **Same Problem, Different Data: A Review and Cross-Dataset Benchmark of Public Flight Delay Datasets** Authors: Chayma El Mellouki, Ilyasse Belarbi, Zineb Alarda, Yousra Chtouki
17:45 – 18:00	ID 184 **Constraint-Aware AI for Private Aviation Charter Decision Support: A Hybrid Predictive-Optimization Framework** Authors: Hayat El Asri, Serafeim Tsiakalos, Younes Ezzaki

Day 2 – Friday, 27 November 2026

Online sessions • Virtual Rooms 1–3

10h00 – 11h30 (GMT)	ONLINE SESSION V1 **Cybersecurity, Privacy & Intrusion Detection** Virtual Room 1 • link : https://meet.google.com/sge-dmii-dgs
Session Chairs	Dr. DERROUZ Hatim, FS, UIT Kenitra – Morocco
10:00 – 10:15	ID 23 **A Combinatorial Optimization Approach to Lightweight, Explainable, and Trustworthy Intrusion Detection in Heterogeneous IoT Networks** Authors: Hafsa Zarhouti, Hamid Bennis, Kenza Oufaska and Khalid El Yassini
10:15 – 10:30	ID 50 **A Novel Hybrid Feature Selection and Advanced Sampling Framework for Adaptive IoT Intrusion Detection** Authors: Mouad Choukhairi, Oumaima Chentoufi, Sara Tahiri, Youssef Fakhri
10:30 – 10:45	ID 107 **Operational Behavior Shaping through Reward Engineering in D3QN-Based Intrusion Detection** Authors: Ibtissam Haddane, Badr Hirchoua and Hicham Moutachaouik
10:45 – 11:00	ID 128 **Collaborative Network Defense under Data Heterogeneity: Evaluating FedAvg and FedProx for Intrusion Detection** Authors: Mohammed Said Boukhryss, Nihad Lechhab Ouadrassi, Abdellah Azmani, Khalid Jebari Hassni
11:00 – 11:15	ID 129 **Comparative Evaluation of Lightweight Unsupervised Anomaly Detectors for Real-Time Security Monitoring in Hyperledger Fabric** Authors: Nihad Lechhab Ouadrassi, Mohammed Said Boukhryss, Abdellah Azmani, Khalid Jebari Hassani
11:15 – 11:30	ID 140 **From Window-Level Detection to Endpoint Alerts: False Alarms and Ransomware Exposure Before Containment** Authors: Bouchra Nkila, Btissam Acim, Hicham Laanaya

10h00 – 11h30 (GMT)	ONLINE SESSION V2 **Computer Vision & Medical AI** Virtual Room 2 • Link : https://meet.google.com/zrg-zmzc-vmn
Session Chairs	Dr. BEN HDACH Adil, EST, MIU, Meknes – Morocco
10:00 – 10:15	ID 26 **Adversarial Robustness of Watermarking Systems for Text-to-Image Diffusion Models: A Focused Review** Authors: Modibo Malle, Zineb Bougroun
10:15 – 10:30	ID 31 **Detecting the Faces That Don't Exist: A Systematic Review of GAN- and Diffusion-Generated Face Image Detection** Authors: Khalid Mhasni, Oumaïma Benaboud, El Mehdi Ismaili Alaoui
10:30 – 10:45	ID 49 **Beyond Accuracy: A Multi-Metric Evaluation of a 1D CNN for ECG Arrhythmia Detection Under Class Imbalance in an IoT-Healthcare Context** Authors: Abadi Fatima Zahar, Ayoub Sghir, Samir Mbarki
10:45 – 11:00	ID 147 **Multi-Style Arabic Calligraphy Recognition and Transcription Using Deep Learning: A Comparative Study Between Custom-Trained Architectures and Pre-Trained Models** Authors: Sanae Chahboun, Hamid Bennis, Khalid Salhi, Khalid El Yassini, Kenza Oufaska
11:00 – 11:15	ID 189 **Robustness and Explanation Stability of Lightweight CNNs and Vision Transformers for Chest X-Ray Pneumonia Classification** Authors: Mohamed Hadadi, Aymane Ait Mansour
11:15 – 11:30	ID 233 **Do per-vehicle gap distributions from a single roadside sensor carry early-warning information about breakdown beyond loop-detector aggregates?** Authors: Idriss Moumen

10h00 – 11h30 (GMT)	ONLINE SESSION V3 AI Applications, NLP & Intelligent Systems Virtual Room 3 • Link : https://meet.google.com/ryt-kugb-xsq
Session Chairs	Dr. HONIT Bouchra, FS, UIT Kenitra – Morocco
10:00 – 10:15	ID 30 Medical Concept Normalization from Social Media Using Pre-trained Transformer Models: A Comparative Study Authors: Hasna Fartit, Ed-drissiya El-Allaly, Ali Bekri
10:15 – 10:30	ID 108 A Comparative Study on Stroke Care Using Machine Learning and Deep Learning Authors: Ayoub Benmiloud, Youssef Elallaoui, Khadija Louzaoui, Khalid Benlhachmi
10:30 – 10:45	ID 247 Range-Consistent Footprints for Traffic Density Estimation from Capped LiDAR Probe Reports: Truncation and Occlusion Regimes on NGSIM Trajectories Authors: Idriss Moumen, Mohamed El Kamili, Ahmed Khallaayoun and Adil El Makrani
10:45 – 11:00	ID 122 FusionHCAT: A Hybrid RoBERTa-Metadata Architecture with a Large Language Model Cascade for Automated Fake News Detection Authors: Assiya Ihsane Errabti, Badr Hirchoua, Mouad Banane
11:00 – 11:15	ID 251 Does Traffic Remember? A Model-Selection Test of Memristive, Relaxation and Switching Models of Capacity Drop and MFD Hysteresis Authors: Idriss Moumen, Ahmed Khallaayoun and Adil El Makrani
11:15 – 11:30	ID 244 Application of multi-criteria decision support in generating association rules from biomedical texts Authors: Azzeddine DAHBI, Idriss MOUMEN, Mohamed EL KAMILI, Mohcine BOUKSIM

10h00 – 11h30 (GMT)	ONLINE SESSION V4 IoT, Smart Cities & Wireless Networks Virtual Room 1 • Link : https://meet.google.com/fbw-gixm-zjf
Session Chairs	Dr. KASSRI Nadia, FS, UIT Kenitra – Morocco
10:00 – 10:15	ID 14 Convergence of AIoT and Explainable AI for Sustainable Wastewater Reuse and Precision Irrigation Authors: Sabrine Chairi El Kammel, Souad Amjad
10:15 – 10:30	ID 15 Artificial Intelligence Approaches in Smart Renewable Energy Management: A Structured Narrative Review Authors: Aya El Hasri, Souad Amjad
10:30 – 10:45	ID 61 Reinforcement Learning for Adaptive Flood Early Warning in Climate-Resilient Cities: A Case Study of Tetouan, Morocco Authors: Issam Bakkour, Zaynab El Khattabi, Otman Abdoun
10:45 – 11:00	ID 136 Diminishing Returns of Duty Cycling: An Energy-Floor Characterisation of Four Low-Power Wireless Sensor Network Stacks Authors: Khalid Oubaha, Omar Boughdad, Jalal Laassiri, Abdeslam Jakimi, Rachid Saadane, Abdellah Chehri
11:00 – 11:15	ID 150 AquaGuard: Budget-Aware Sensor Placement with Forecast-Innovation Leak-Onset Detection in Water Distribution Networks Authors: Reda Nadir, Rizq Chafik Ellshaki

10h00 – 11h30 (GMT)	ONLINE SESSION V5 **Cloud, Distributed Systems & Digital Twins** Virtual Room 2 • Link : https://meet.google.com/aiv-qyfv-aua
Session Chairs	Dr. LEMALEM Yasser, EST, UIT Kenitra – Morocco
10:00 – 10:15	ID 46 **Multi-Objective Metaheuristic Optimization of HDFS Block Placement Using Genetic Algorithms and Particle Swarm Optimization** Authors: Ayoub Sghir Fatima Zahra Abadi, Najat Rafalia and Jaafar Abouchabaka
10:15 – 10:30	ID 139 **Federated Digital Twins for Multi-Actor Logistics 4.0 Networks: A Reference Architecture and Data Governance Framework** Authors: Abdelghafor Azraa, Youssef Rochdi
10:30 – 10:45	ID 148 **A Blockchain-IPFS Pruning Architecture for Storage-Efficient Intelligent Transportation Systems** Authors: Anas Mejdoub, Noura Layachi, Aissa Ben Yahya, Abdelbaki El Belrhiti El Alaoui
10:45 – 11:00	ID 172 **SC_AGENTIC_DT: A Simulation-Based Agentic Digital-Twin Framework for Resilient Upstream Procurement** Authors: Bilal Assandi
11:00 – 11:15	ID 181 **A Multi-Protocol Standards-Based Penetration Testing Framework for Security Assessment of Wireless Body Area Networks** Authors: Khalil Boukri, Bouchra Honnit, Mohamed Nabil Saidi

10h00 – 11h30 (GMT)	ONLINE SESSION V6 **Educational Technologies & Intelligent Learning** Virtual Room 3 • Link: https://meet.google.com/ame-rtwm-qsp
Session Chairs	Dr. MAHBOUB Oussama, ENSA-Tetouan, AEU, Morocco Dr. Mohamed Jouhari, Ibn Tofail Univeristy, Kenitra, Morocco
10:00 – 10:15	ID 109 **A Robust Hybrid Dual-Stream Framework for Automated Essay Scoring with Centroid-Based Reference Extraction and Triple-Defense Logic** Authors: Tharun Kunchanapalli, Sai Sreeja Karanam, Manikanta Karthik Vura, Lakshmi Naga Aswini Basava, Sanjeev Mekala, Satish Anamalamudi
10:15 – 10:30	ID 132 **Design of an Educational Chatbot for Personalized and Interactive Learning** Authors: Wijdane Kaiss, Oussama Kaiss, Khalifa Mansouri, Franck Poirier
10:30 – 10:45	ID 54 **AIGM: A Policy-Enforcing Guardian Runtime for Supervising Autonomous Agents in Intelligent Ecosystems** Authors: Mohammed Saeed Jawad, Marcin Mrugalski, Giacomo Cabri, and Bogdan Lipiec
10:45 – 11:00	ID 173 **Rainfall-Adaptive Granger-Causal Gating for Multi-Horizon Traffic Flow Prediction** Authors: Idriss Moumen, Adil El Makrani, Ahmed Khallaayoun and Mohamed El Kamili
11:00 – 11:15	ID 143 **A Data-Driven Approach for E-Learning Style Identification Using Artificial Intelligence Algorithms** Authors: Assri Bensalem, Amine Mrhari, Moulay Youssef Hadi, Mohamed Boutaib
11:15 – 11:30	ID 223 **Apple Stock Forecasting with Multimodal GRU-Delta Signals** Authors: Zakaria Al Bakkari, Adil El Makrani, Ikram El Azami

10h00 – 11h30 (GMT)	ONLINE SESSION V7 **Modeling, Simulation & Optimization** Virtual Room 1 • Link : https://meet.google.com/ntn-ukxf-tfq
Session Chairs	Dr. CHARAF Moulay El Hassan, FS, UIT Kenitra – Morocco Dr. AZZOUZI Salma, FS, UIT Kenitra – Morocco
10:00 – 10:15	ID 38 **Do Global Commodity Prices Improve MASI Forecasting? An Explainable Deep Learning Study** Authors: Aissa El Hamzaoui, Mohammed Mourchid
10:15 – 10:30	ID 241 **Evaluating Large Language Models for Cybersecurity Compliance Assessment: A Case Study on NIST CSF 2.0** Authors: Safaa Louzaoui, Idriss Moumen, Khalid Benlhachmi, Khadija Louzaoui
10:30 – 10:45	ID 131 **Robust Intelligent DA-XACML Against Reward Poisoning in Fog-IoT Access Control** Authors: Inès Legmouz, Salma Azzouzi, Lalla Amina Charaf, Moulay El Hassan Charaf, Ayman Sarti
10:45 – 11:00	ID 190 **Learning When to Smooth: Predicting Regularization in Variational Optical Flow from Image Features** Authors: Chaymae Nachaf, Hajar Ouaghad, El Mostafa Kalmoun
11:00 – 11:15	ID 200 **Predicting Ferry Arrival Delays on Routes with Little or No History** Authors: Omar Mehraby, Ilias El Mataoui, Malek Sarhani
11:15 – 11:30	ID 213 **Are We There Yet? Linear-Time Quantum Routing on Welded Trees** Authors: Hamza Berahma

Closing Ceremony

Friday, 27 November 2026 • Online

Thank you for taking part in CAISN'26. See you at the next edition!

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