

G3S'26

21 - 23 Oct, 2026

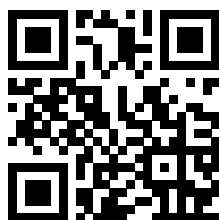
Beni Mellal, Morocco



Conference Program

of

The 10th Global Symposium
on Smart Computing and Systems



Springer



Royaume du Maroc
Ministère de l'Enseignement Supérieur,
de la Recherche Scientifique et de l'Innovation



Timetable

KL : Keynote Lecture **CT** : Contributed Talk

 All times in the program are given in GMT

Wednesday, 21 of October

08:00		Registration and Reception 📍 Conference room 1 hall
9:00		Opening & Welcome from discussion Panel members 📍 Conference room 1
10:00	KL	Plenary session 01: Chair : Mohamed Kayyali 📍 Conference room 1 <i>Title:</i> Toward a Holistic Approach to Smart and Sustainable Mobility 🎤 Keynote Speaker: Mohamed Essaaidi
10:45		Morning Coffee Break 📍 Conference room 1 hall
11:15	KL	Plenary session 02: Chair : Moulay Driss El Oudghiri 📍 Conference room 1 <i>Title:</i> Artificial Intelligence and the Discovery of Topological Structures in High Dimensions 🎤 Keynote Speaker: Benlahmar El Habib
12:00		Lunch Break
14:00	KL	Plenary session 03: Chair : Sara El-Ateif 📍 Conference room 1 <i>Title:</i> Smart Urban Mobility through Connected Vehicles and IoT Technologies 🎤 Keynote Speaker: Jalel Ben-Othman
14:45	KL	Plenary session 04: Chair : Benlahmar El Habib 📍 Conference room 1 <i>Title:</i> Illegal dumping and AI 🎤 Keynote Speaker: Mohamed Kayyali
15:30	CT	Session 01: Artificial Intelligence for Healthcare and Nutrition Chair : Youssef EL MOURABIT 📍 Conference room 1
15:30	CT	Session 02: AI for Education and Learning Analytics Chair : Safi Said 📍 Conference room 2
15:30	CT	Session 03: Deep Learning for Medical and Agricultural Imaging Chair : Mohamed BOURZIK @Google meet: nrk-hvuj-yao
15:30	CT	Session 04: Biomedical Signals, Cardiovascular Prediction and Health Data Exchange Chair : Houda MOUDNI @Google meet: ccj-vbbw-pnk
17:30		Afternoon Coffee Break 📍 Conference room hall

Thursday, 22 of October

08:00		Registration and Reception 📍 Conference room 2 hall
08:30	KL	Plenary session 05: Chair : Jamal Bakas / Samir Elouaham 📍 Conference room 2 <i>Title:</i> The Imperative of AI Safety in Smart Ecosystems 🎤 Keynote Speaker: Sara El-Ateif
09:15	KL	Plenary session 06: Chair : Azzdine Dliou / Saddik Amine 📍 Conference room 2 <i>Title:</i> Business and Finance in the Age of Agentic AI 🎤 Keynote Speaker: Daniel Gonzalez Cortes
10:00		Morning Coffee Break 📍 Conference room 2 hall
10:30	CT	Session 05: Cybersecurity, Fraud Detection and Network Intelligence Chair : Mohamed OUHDA 📍 Conference room 2
10:30	CT	Session 06: Machine Learning for Finance, Imbalanced Data and Risk Prediction Chair : Mohamed EL MOHADAB @Google meet: omd-qyiz-pcv
10:30	CT	Session 07: Decision Support, Digital Twins and Smart Mobility and Port Systems Chair : Hamid OUNAAN @Google meet: wpe-yinh-owf
12:30		Lunch Break
14:30	KL	Plenary session 07: Chair : Daniel Gonzalez Cortes 📍 Conference room 2 <i>Title:</i> When the Network Thinks: Deep Reinforcement Learning and Autonomous Orchestration Inside the Infrastructure 🎤 Keynote Speaker: Halima El Biaze
15:00	KL	Plenary session 08: Chair : Hicham Zougagh 📍 Conference room 2 <i>Title:</i> Making Business Analytics Work: Critical Success Factors for Implementation 🎤 Keynote Speaker: Pedro Isaías
15:30	CT	Session 08: Intelligent Vehicles, Embedded Systems and Remote Sensing Chair : Abderrazak Farchane 📍 Conference room 2
15:30	CT	Session 09: Advanced Machine Learning, Optimization and Language Processing Chair : Driss AIT OMAR 📍 Room 1 Bloc C
15:30	CT	Session 10: Recommender Systems, LLMs and Responsible AI Chair : Khalid OUNACHAD @Google meet: kqa-gait-qaq
15:30	CT	Session 11: Secure and Resilient Networked and Embedded Systems Chair : Siham BAKKOURI @Google meet: oeo-jybz-zce
17:30		Afternoon Coffee Break 📍 Conference room hall

Friday, 23 of October

09:00 –12:00	Social Event, Excursion
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Keynote Lecture 01

Title: Toward a Holistic Approach to Smart and Sustainable Mobility

Mohamed Essaaidi, ...📍 *ENSIAS, Mohammed V University, Morocco*

KL

Keynote Lecture 02

Title: Artificial Intelligence and the Discovery of Topological Structures in High Dimensions

Benlahmar El Habib, ...📍 *Hassan II University, Morocco*

KL

Keynote Lecture 03

Title: Smart Urban Mobility through Connected Vehicles and IoT Technologies

Jalel Ben-Othman, ...📍 *Université Paris-Est Créteil (UPEC), France*

KL

Keynote Lecture 04

Title: Illegal dumping and AI

Mohamed Kayyali, ...📍 *IFGICT, United States*

KL

Keynote Lecture 05

Title: The Imperative of AI Safety in Smart Ecosystems.

Sara El-Ateif, ...📍 *ENSIASD, Ibn Zohr University, Morocco*

KL

Keynote Lecture 06

Title: Business and Finance in the Age of Agentic AI

Daniel Gonzalez Cortes, ...📍 *Institut Supérieur de Gestion, France*

KL

Keynote Lecture 07

Title: When the Network Thinks: Deep Reinforcement Learning and Autonomous Orchestration Inside the Infrastructure

Halima El Biaze, ...📍 *UQAM, Canada*

KL

Keynote Lecture 08

Title: Making Business Analytics Work: Critical Success Factors for Implementation

Pedro Isaías, ...📍 *Universidade Aberta, Portugal*

KL

Contributed Talks

Session 01: Artificial Intelligence for Healthcare and Nutrition (On-site)

Eye-Tracking-Based Autism Spectrum Disorder Screening Using Weighted Ensemble Learning and Nested Cross-Validation

Rania KHADIM, and Wiam SALHI

CT

Predicting Influenza Propagation Using LSTM and Machine Learning Models: A Comparative Study on French Sentinel Network Data

Israe EL GHIZI, Fatima Ezzahra EL HACHIMI, Khawla HAMOUICHOU, Youssef EL HABOUZ, Meriam FARISS, and Youssef EL MOURABIT

CT

Machine Learning and AI for Diabetes Prediction: A Comprehensive Review and Comparative Benchmark

Weam FAKIR, FAKIR Youssef, and Rachid EL AYACHI

CT

Automated Epileptic Seizure Classification via Multi-Resolution Wavelet Analysis and Machine Learning Algorithms

Omar BAMAAROUF, Said AGOUNAD, and Said CHARFI

CT

A Cross-Attention Based Multimodal Framework with XGBoost for Maternal Health Risk Prediction

Toufik DATSI, Salim OUASFI, Brahim AIT BENALI, and Mohamed HACHIMI

CT

Integrating Agri-Food Systems, Nutrition, and Artificial Intelligence for Early Diabetes Prediction

Weam FAKIR, youssef FAKIR, Rachid EL AYACHI, and Ahmed AITCHAOU

CT

Comparing CNN, ViT, VLM, and Multi-Agent Architectures for Pneumonia Classification: The Impact of Transfer Learning and Dataset Size

Houssam HALMAOUI

CT

Session 02: AI for Education and Learning Analytics (On-site)

Personality-Aware Engagement Recognition Using Vision-Language Models

Ayoub OUARKA, Mohamed EL HAJJI, Tarek AIT BAHA, and Youssef ES-SAADY

CT

Energy-Efficient Artificial Intelligence for Adaptive Learning Systems: A Literature Review of Methods and Sustainability Challenges

Imane EL IBRAHIMY, and Badr HSSINA

CT

AI-Driven Stakeholder Engagement Analytics in Agile Open-Source Software Projects Using GitHub Data

Issam TALKAM, Abdessamad BELANGOUR, and Ibrahim HAMZANE

CT

Comparative Analysis of Student Dropout Prediction Using Machine Learning

Mohammed AMEKSA, Kamal BOUSEBBAT, and Ahmed OUQOUR

CT

Learning-Adapted Conversational Agent Based on RAG

Ahmed OUQOUR, Amine BOURAMTANE, Abdelhadi OUNZI, and Mohammed AMEKSA

CT

PredictEDU: An Explainable Decision-Support Framework for Early Student Success Prediction

Radya HANNAD, Mohammed ERRITALI, and Cedric SANZA

CT

Overcoming the Cold-Start Problem in Educational Recommender Systems via Zero-Shot Semantic Personas

Ismail EL OUARGUI, and Youness MADANI

CT

Session 03: Deep Learning for Medical and Agricultural Imaging (Online)

Plant Disease Identification Through Residual Learning Framework: Improved ResNet-9 Architecture

Abdessamad OURAMMOU, Abdellatif DAHMOUNI, and Idriss CHANA

CT

FLAIR-Guided Preprocessing for Lightweight 3D U-Net Brain Tumor Segmentation: An Experimental Study on the FeTS Dataset

Ragba CHARAF EDDINE, Insaf BELLAMINE, and Abdelhak BOULAALAM

CT

Mobile-Based Lightweight Deep Learning for Multi-Level Cactus Cochineal Diagnosis

Fatima HMACHE, Hamza AIT-ICHOU, Azzedine DLIOU, Mohamed ZARBOUBI, Mohammed HSSAISOUNE, Omar BAMAAROUF, and Lhoussaine BOUCHAOU

CT

Transfer Learning-Based Breast Mass Segmentation in Mammograms Using U-Net and U-Net++ with Multiple Pre-trained Encoder Backbones

Chaima SOUBAI, Insaf BELLAMINE, and Abdelkader AIT ABDELOUAHAD

CT

Explainable Deep Learning for Cervical Cell Classification: Grad-CAM Visualization of DenseNet121 on SIPaKMeD

Hanane N'AIT TALEB, Hafsa BOUDRAA, Adil TANNOUCHE, and Hafida HANINE

CT

YOLOv8-Based Detection and EfficientNet-B2 Classification of Coronary Artery Stenosis on Invasive Angiography

Hiba IMGHARNE, Samir ELOUAHAM, Boujemaa NASSIRI, and Ilyas AIT ICHOU

CT

Session 04: Biomedical Signals, Cardiovascular Prediction and Health Data Exchange (Online)

EEG Anomaly Classification: A Thematic Review of Machine-Learning and Deep-Learning Methods, Evaluation Practices and Limitations.

Nisrine ZALIGA, Azzedine DLIOU, Elhoussain OULHAJ, and Brahim BIHADASSEN

CT

Privacy-Aware FHIR Provenance for Trusted Clinical Data Exchange with Hyperledger Fabric

khaoula CHAFIK, Mohamed HANINE, and Abdellah OUAGUID

CT

A Geometric Machine Learning Framework Using Convex Hull Model for Cardiovascular Disease Prediction.

Idriss TAZIGH, Walid BOUARIFI, and Ali AZOUGAGHE

CT

Comparative Analysis of GA, and SMA for VMD-Based PCG Denoising

Jamal ISKNAN, Ilyas AIT ICHOU, and Boujemaa NASSIRI

CT

EMG Rest/Movement Detection with Hybrid CNN Transformer Attention Networks

Fatima BELKADI, Ilyass AIT ICHOU, Sara KERROUCH, Youssef NAHRAOUI, and Boujemaa NASSIRI

CT

An End-to-End Edge-AIoT System for Real-Time Surface EMG Gesture Recognition: A Low-Cost Proof of Concept for Monitoring Residual Motor Responses in Comatose Patients

Youssef FRITAH, Samir ELOUAHAM, Youssef NAHRAOUI, Boujemaa NASSIRI, and Hicham ZOUGAGH

CT

Session 05: Cybersecurity, Fraud Detection and Network Intelligence (On-site)

Validating Feasibility and Forecastability in RAN Network Slicing

Mohamed SEBNAT, Anass Abdelhamid EL ALAMI, Mohamed El Amrani, and M'hamed OUTANOUTE

CT

A Comparative Study of Centrality Measures for finding Influential Nodes in Complex Networks

Farah BENSaid, Anasse TAHBOUN, E lyazid AKACHAR, Bouchra FRIKH, and Brahim OUHBI

CT

Comparative Analysis of Artificial Intelligence Approaches for Cloud-Based Intrusion Detection

Laila BESNSAHB, Hayat KHALOUFI, and Karim ABOUELMEHDI

CT

Out-of-Band Security Framework for Multimedia Communication Channels: A Hybrid AI-Assisted Defense for VPN, VoIP, and Video Streaming

Mohamed KHAYATI, Rachid BOURIGUE, Driss AIT OMAR, and Hamid GARMANI

CT

A Focused Survey on Robust MIMO Channel Estimation under Non-Gaussian and Impulsive Noise

Ousama EL-AZIZI, Youness BELAADEL, and Said SAFI

CT

A Hybrid CNN-DNN Deep Learning Approach for Network Intrusion Detection

Karim YASSINE, and Mohamed EL MOHADAB

CT

HybridMeta-XGB: Cost-Sensitive Credit-Card Fraud Detection with Unsupervised Anomaly Meta-Features

Abdellatif ELBADRAOUI, Yassine MOUHSSINE, Abdelkader EL ALAOUI, and Said OUATIK EL ALAOUI

CT

Session 06: Machine Learning for Finance, Imbalanced Data and Risk Prediction (Online)

Deep Reinforcement Learning for Algorithmic Stock Trading: A Controlled Comparative Study of DQN, DDQN and Dueling DDQN

Sanaa BOUABIDI, Fatima HOUMAM, Mariam Belghzal, and Mohamed BASLAM

CT

Toward a Hybrid Model for Credit Card Fraud Detection Combining Gradient Boosting Classifier and Gated Recurrent Unit

Marouane BEN BOUBKER, Ahmed EDDAOUI, Sara OUAHABI, Tarik ELMETTAT, and Al Mahdi KHADAR

CT

Comparative Evaluation of Advanced Oversampling Techniques for Machine Learning-Based Financial Fraud Detection in an African Context

Tarik ELMETTAT, Mohammed ERRITALI, Marouane BEN BOUBKER, Ahmed EDDAOUI, and Khaddar ALMAHDI

CT

An Intelligent Trading System Based on a Hybrid BiLSTM-BiGRU Model with Attention Mechanism for Return Prediction and Decision Making in Cryptocurrency Markets

Sanaa BOUABIDI, Mariam BELGHZAL, and Abderrahim SALHI

CT

Benchmarking Classical, Quantum, and Hybrid Machine Learning for Traffic Crash Severity Prediction: A Comprehensive Comparative Analysis

Naima GOUBRAIM, Zouhair ELAMRANI ABOU ALASSAD, and Hajar MOUSANNIF

CT

A Comparative Study of Class Imbalance Methods in Machine Learning: Threshold Calibration as a Baseline

Nabil NASSIH, Mohamed HANINI, Mohamed HASSAOUI, and Abdellah ZAALLOUL

CT

Session 07: Decision Support, Digital Twins and Smart Mobility and Port Systems (Online)

Fuzzy Logic-Based MCDM Methods (2010–2026): A Systematic Review of Advances, Applications, and Future Directions

Hafid EL KARIMI, Latifa BOUBEKRI, Hassnae ABERKANE, Moulay Driss EL OUADGHIRI, and Mohamed Chaouki ABOUNAIMA

CT

Edge AI-based intelligent monitoring system for maritime pollution in port environments : A Systematic Review with Perspectives from the Port of Agadir

Imane EL TAZY, Wissam JENKAL, Boubkar BAHANI, Amine SADDIK, and Azzedine DLILOU

CT

Closing the Loop in Port Computer Vision: A Progressive Human in the Loop Reference Architecture

Ghaith BRAHAM, Mohamed TOUATI, Rabeb TOUATI, Bernd NOCHE, and Sadok BEN YAHIA

CT

Artificial Intelligence-Enhanced Digital Twins for Intelligent Decision-Making in Industry X.0

Khaoula KADI, Laila EL ABBADI, and Moulay Driss EL OUADGHIRI

CT

Spatio-Temporal AI and Multi-Agent Systems for Urban Traffic Optimization: A Systematic Literature Review

Siham HASNAOUI, Mariam BERRADA, Fatima Ezzahraa BOUNADAR, Bahaa Eddine ELBAGHAZAOU, and Hamid OUANAN

CT

IW-CR: a reliability mechanism based on consistency ratios for inverse weight inference in multi-criteria decision support

Hassnae ABERKANE, Latifa BOUBEKRI, Hafid EL KARIMI, and Mohammed Chaouki ABOUNAIMA

CT

An Intelligent Decision-Support Framework for the Strategic Deployment of Integrated Static and Dynamic Wireless Charging Infrastructure for Electric Vehicles

Hassane ELBAZ, and Mohammed BOURZIK

CT

Session 08: Intelligent Vehicles, Embedded Systems and Remote Sensing (On-site)

Bridging Benchmark and Reality: A Comparative Evaluation of Stereo Depth Estimation Methods for Embedded ADAS on Real-World Driving Data

Mustapha ELMACHROUH, Noughaila GUIRROU, Lhoussain EL HAJJAMI, Abdessamad KLILLOU, and Assia ARSALANE

CT

Reducing Task Migrations in DP-WRAP Multiprocessor Scheduling Using a Genetic Algorithm

Fatima Zohra HASSANI, Achraf BERRAJAA, and Aicha KERFALI

CT

Optimal Parameter Tuning of Lateral Predictive Control for Autonomous Ground Vehicle: A Model-Based Design Validation Approach

OUAKKI BOUCHIAD, Lhoussain EL HAJJAMI, and Ahmed NOUÇRY

CT

A Comprehensive Systematic Mapping of Deep Learning Techniques for Satellite-Based Environmental Monitoring

Fatima RHANAM, Khalid EL ASNAOUI, Mohamed SABER, and Youness CHAWKI

CT

Adaptive IoT Data Acquisition Architecture for Digital Twin of an Off-Road Electric Vehicle

Salma MESSAOUDI, Ouïçal SIRGIANE, Aya ZENATI, El Hassan ABDELWAHED, Abdellah NABOU, Sara QASSIMI, Khamis JAKOB, Ahmed BENDAOUIA, Pietro PAGLIARULO, and Jianzhi LI

CT

FMCW Radar-Based Object Recognition Using Lightweight YOLO Models on Jetson Orin Nano

Noughaila GUIRROU, Mustapha ELMACHROUH, Mohamed LAMANE, Abdessamad KLILLOU, and Assia ARSALANE

CT

Session 09: Advanced Machine Learning, Optimization and Language Processing (On-site)

Resource-Efficient Arabic Dialect Identification: A Calibrated Late-Fusion Framework Combining Transformers and Character N-grams

Ahmed BENELKHIRAOU, Ismail EL BAZI, and Hicham MOUSSA

CT

Predictive Classification of Low-Rainfall Streptomyces-Associated Ecological Niches

Hajar MHAMMEDI, Said BOUDA, Youssef EL HILALI ALAOUI, Houria BENAMAR, Eima Dine Tariq BOUHLALI, Abdelmajid HADDIOUI, and Adil ESSARIOUI

CT

Integrating Group-Rational Kolmogorov-Arnold Networks into Modern Computer Vision Architectures: An Empirical Study for Image Classification yassine OULHAMMOUS, Achraf AIT LAYDI, Youssef El HABOUZ, and Yousef El MOURABIT	CT
GPU Parallelization of MCDM Methods: A Systematic Review of Structural Potential and Empirical Evidence Latifa BOUBEKRI, Hassnae ABERKANE, Hafid EL KARIMI, and Mohammed Chaouki Abounaima	CT
DarijaBERT for Sentiment Analysis on Moroccan Social Media: A Large-Scale Study with Hybrid Annotation and Agentic Response Generation Ahlame LAOUAD	CT
Retrospective Trust Reweighting Detects Quiet Quasi-Newton Failures Under Structured Clinical Noise Yassine YAZIDI, and Hamid GARMANI	CT

Session 10: Recommender Systems, LLMs and Responsible AI (Online)

Enhancing Educational Recommendations: A Time-Aware Dual-Interest BiLSTM for Personalized Learning Pathways on EdNet Brahim ES-SABERY, Abdelkader MOUMANE, Mohamed OUHDA, and Mohamed BASLAM	CT
A Risk-Sensitive Human-in-the-Loop Protocol for Deliberation-Preserving Judicial AI Mourad OUZZIKI, Mohamed IGUERNANE, Youssef ES-SAADY, and Mohamed El HAJJI	CT
A Secure Pure-RAG Architecture for Chatbot Integration in SME ERP Systems: Design, Implementation, and SLM Benchmarking on Odoo Nabila ANTER, Abderrahman AZI, Abderrahim SALHI, and Mohamed EL AMRANI	CT
How Evaluation Design Shapes Conclusions in Next-Course Recommendation: Protocol, Candidate-Set and User-History Sensitivity Abdelkader MOUMANE, Brahim ES-SABERY, Soukaina OUFQIR, and Mohamed OUHDA	CT
Traceable Multi-Source Monitoring of Judicial Workload and Governance Context: An Ecuadorian Decision-Support Study, 2016–2026 Alfonso Gonzalez IRUMA, Edision NARANJO LUZURIAGA, Ronaldo Cristiano PRATTI, and Susana Alexandra ARIAS TAPIA	CT
A Function-Autonomy Taxonomy for LLM Agents in Drug Discovery: Systematic Mapping and a Governance Proposal Leila MEKIANI, Mohammed AMEKSA, Mohamed-Amine CHADI, and Hajar MOUSANNIF	CT

Session 11: Secure and Resilient Networked and Embedded Systems (Online)

Distance-Based Clustering for Latency, Energy, and Cost Optimization in IoT-Fog Systems

Hamza ELHAOU, Rachid BOURIGUE, and Driss AIT OMAR

CT

Detection of Multi-Stage Attacks in the Context of Supply Chain Compromises: A Literature Review

Saad BENMOUYA, Anas ABOU EL KALAM, and Ali AZOUGAGHE

CT

A Password-less Secure Cloud Authentication Scheme Using Biometric-derived Keys and Signature of Elliptic Curve Cryptography

Padma BHOGARAJU, and D. Deepthi

CT

GAN-Augmented Deep Reinforcement Learning for Proactive SDN Routing in Ultra-Low-Latency 6G Networks: An Empirical Study

Samira ACHKI, Sanaa KABIL, Ahmed OUQOUR, and Abderahim BEN BOUNA

CT

A Lightweight Bare-Metal RISC-V SoC: Design, Implementation, and FPGA Validation

Abderrahmane AZAZ, Hassan OUAHI, Amine SADDIK, Mohamed ZARBOUBI, Zakaria EL KHADIRI, Rachid FATEH, and Omar BAMAAROUF

CT

Class-Imbalance-Aware Intrusion Detection in Wireless Sensor Networks Using Machine Learning

Soukaina OUFQIR, Abdelkader MOUMANE, Abderrahman AZI, and Houda MOUDNI

CT