



ESAI'25 Provisional Program

08h15 - 09h:00	Welcoming and Registration
09h00 - 9h:30	Opening Ceremony
ZOOM Link:	----- LINK -----
09h30 - 10h30	Keynote Talk 1 : Co-Design for AI based on the Cache Aware Roofline Model Prof. Leonel Sousa Moderator :
10h30 – 13h00	Oral Session ESAI 1 : Artificial intelligence Chairs: Oral Session ESAI 2 : Embedded systems and applications Chairs: Oral Session ESAI 3 : Image, video processing & IA Chairs: Oral Session ESAI 4: Telecom & Network Technology Chairs:
13h00 - 15h00	Break
15h00 – 16h00	Keynote Talk 2: From Generative AI to Automation: Challenges, Benefits, and Research Questions for the Enterprise of the Future Prof. Omar BENCHAREF Moderator :
ZOOM Link:	----- LINK -----
16h00– 18h30	Oral Session ESAI 5 : Artificial intelligence Chairs: Oral Session ESAI 6 : Embedded systems and applications Chairs: Oral Session ESAI 7 : Image, video processing & IA Chairs: Oral Session ESAI 8: Data analysis and Serious games Chairs:

ESAI'25 Provisional Program

Friday, December 19, 2025	
ZOOM Link:	-----LINK-----
09h00 -10h00	Keynote Talk 3: Artificial Intelligence in Wireless Sensor Networks for greenhouses monitoring Prof. Jaime Lloret Moderator :
10h00 – 12h30	Oral Session ESAI 9 : Natural language processing Chairs: Oral Session ESAI 10: : Security and Wireless Network Technologies Chairs: Oral Session ESAI 11: Renewable Energies and IA Chairs: Oral Session ESAI 12 : Embedded systems and applications Chairs:
12h30 - 15h	Break
15h00 - 16h00	Keynote Talk 4 : Artificial Intelligence for Ambient Intelligence Prof. Vincenzo Piuri Moderator : Keynote Talk 5: AI and unsupervised stochastic learning for global sensitivity analysis Prof. Mohammed SEAID Moderator :
ZOOM Link:	-----LINK-----
16h00– 18h30	Oral Session ESAI 13 : Artificial intelligence Chairs: Oral Session ESAI 14 : Data Analysis Chairs: Oral Session ESAI 15 : Fuzzy and Expert systems Chairs: Oral Session ESAI 16 : Artificial Intelligence and Embedded Systems Chairs:
18h30 – 19h00	Closing Ceremony

ESAI 2025 Official Program

Oral Session ESAI 1 : Artificial Intelligence 10h30 – 13h00, Thursday, December 18, 2025	
Chairs:	
ZOOM Link:	----- LINK -----
	ID 1 : Enhancing Arabic Industrial Voice Command Recognition Using CNNs with Dilated Temporal Convolutions laaidi, naouar*; Ezzine, Abderrahim; Telmem, Meryam ; satori, hassan ID 210 : Benchmarking Attention-Based Enhancement of CNN-Based Moroccan Arabic Darija ASR Systems Khaoula El manaa*; Hassan SATORI ID 256: Artificial Intelligence for Predicting Pregnancy Risk Factors : A Literature Review karima lakhdadi* ID 118: A Unified Security Framework for Smart City AI Systems: Cross Domain Vulnerability Analysis and Mitigation Strategies rachid sakassa*; oussama aziz; khawla tadist; El Bachir Tazi ID 158: Seasonal IoT-GNN: A Conceptual Framework for Context-Aware Handicraft Recommendation in Tourism Khadija Kassabi*, Fahd Kalloubi, Abdelhak Boulaalam
Oral Session ESAI 2 : Embedded systems and applications 10h30 – 13h00, Thursday, December 18, 2025	
Chairs: :	
ZOOM Link	----- LINK -----
	ID 259: Non-Invasive Computational Diagnostics for Laryngeal Pathology: Voice-Based and Multimodal Learning Perspectives Kanza Boujraine* ID 185: Enhanced bio-inspired SLAM model Implemented on heterogeneous architecture Amraoui Mounir* ID 107: Visual Question Answering Challenges: A Review Aya Nuseir*; Marc Ebner ID 62: Comparative performance analysis of PID and SMC controllers in a model-in-the-loop framework for quadrotor UAVs <i>Meryem Lahboub*, Anass Mansouri, Hamid Hassani, Ali Ahaitouf</i> ID 52: Improved Super-Twisting for Robotic Manipulators: Toward Reduced Chattering and Enhanced Tracking Performance Yassine Kali, Maarouf Saad
Oral Session ESAI 3 : Image, Video Processing and IA 10h30 – 13h00, Thursday, December 18, 2025	
Chairs:	
ZOOM Link	----- LINK -----
	ID 5: A Comparative Study of Classical Machine Learning Models for Facial Emotion Recognition with Handcrafted Features FATIMA-ZAHRA NACIRI*; INSAF BELLAMINE; ABDELHAK BOULAALAM ID 152: Efficient Deep Learning: Model Optimization Strategies for Resource-Constrained Devices Mohamed Echchidmi* ID 131 : TinyML: Accelerometer-Based Processing for Seismic Detection in Buildings Marwane Rezzouki* ID 99: A Blind Watermarking Scheme for Medical Images Based on DWT, SVD, and Arnold Transform to Strengthen E-Health Security Reda Alout*; Habib Ayad

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	ID 153: Interpreting Bank Term Deposit Prediction Models: A Comprehensive SHAP Approach Meryem SAKET*; Hayat SAHLAOUI; Laarbi abdellaoui alaoui; Mostafa Merras ID 198: Deep Reinforcement Learning-Based MPC for Lateral Maneuver of Autonomous Vehicles Souhail Bentayek, Yassine Kali, Jean-Pierre Kenné, Khalid Benjelloun, Ahmed Chebak ID 120: Neuroeducation and Artificial Intelligence: A Systematic Review of Innovative Approaches for Personalized E-learning Ridouane Oubagine, Loubna Laaouina, Adil Jeghal, Hamid Tairi
Oral Session ESAI 4: Telecom & Network Technology 10h30 – 13h00, Thursday, December 18, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 222: Triptych AI – Innovation – Cybersecurity: Challenges and Opportunities for Financial Services: The Case of Moroccan Banks Safae Hammani*; Adnane El bayane; Fadoua EL MOUAFFAQ ID 159: Design of an Ultra-Wideband Microstrip Bandpass Filter for Advanced Communication Applications Fatima KIOUACH*; Mohammed El Ghzaoui ID 166: Innovative MIMO Antenna with Frequency reconfigurability for 5G mm-Wave Systems abdelhafid oumarbeh*; Mohammed EL Ghzaoui; Yousra Ghazaou; Badre Bossoufi; Rachid El Alami ID 59: Intrusion Detection System To Secure AI-powered Elearning Platforms Against Various Cyberattacks ayoubi abdissamad*; laaouina loubna; JEGHAL adil; tairi hamid ID 82: Comparative Review of Hybrid AI Approaches for Traffic Signal Systems Mohamed Azzouazi, Brahim RAOUYANE, Abdelkrim SAOUABE, Doha BANOU
Oral Session ESAI 5 : Artificial Intelligence 16h00 – 18h30, Thursday, December 18, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 258: MFCC, PLP, and AI Approaches for Laryngeal Lesion Diagnosis Kanza Boujraine* ID 266: AI at the Service of Moroccan University Decision-Makers: Between Technological Innovation and Institutional Constraints Sanae El maliki*; Meriem Rachid; Zouheir Boussouf; Mouna Zerhouni Khal ID 237: Sentiment Analysis and Opinion Segmentation of Tourist Feedback in the Moroccan Tourism Sector Using Machine Learning and Deep Learning Approache Rachid LARHMOUCH*; HANAE Moussaoui; Nabil EL AKKAD ID 73: Advanced Deep Learning Algorithms: Architectures, Mathematics, Applications and Open Challenges lobna el harrouchi*; Hanae MOUSSAOUI; Mounir KARMOUDI; Nabil EL AKKAD ID 265: Generative AI and the Psychological Experience of Employees Meriem Rachid *; Sanae El Maliki; Zouheir Boussouf; Mouna Zerhouni khal ID 238: AI-Driven Behavior Prediction in Autonomous Vehicles: A Concise Review Khaoula EL AKROUT*
Oral Session ESAI 6 : Embedded systems and applications 16h00 – 18h30, Thursday, December 18, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 246: Energy-Aware Torque Allocation Strategies for Multi-Motor Electric Vehicles: Simulation-Based Benchmarking Primela FANOU*

ESAI 2025 Official Program

	ID 209: CoutTree: A Dataset for Tree Counting using Vision Transformers Yassine Ladham; Omar Elharrouss*; Yasir Mahoomd; Elarbi Badidi ID 183: Study of traditional and modern methods for diagnosing mycetoma: the case of grain culture - A systematic review Mor Diagne*; kpetchehoue Merveille Santi Zinsou; Idy Diop; Mass Gning ID 72: Management of an agricultural greenhouse by integrating the Internet of Things (IoT) Abderrazak KAIDA*; Youssef EL AFOU; abdelouahad ait mssad; Abderrahman AITDADA; Omar Ouabouch ID 81: Multi-Agent Reinforcement Learning for Collaborative Airport Stand Allocation: Systematic Review with Generative AI Integration DOHA BANOUl*; Abdelmajid Boussselham; MOHAMMED MESTARI; Abdelkrim Saouabe; Khalid Tizra
Oral Session ESAI 7: Image, Video Processing & IA 16h00 – 18h30, Thursday, December 18, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 40: Fuzzy C-Means Segmentation Enhanced by the Improved Sine Cosine Algorithm: Experiments on Medical Images OUSSAMA EL HAOUARI*; Nabil Elakkad; Lahbib Khrissi; Mourad Hana ID 146: A Lightweight LSTM-Based Model for Sequential Movie Recommendation Aya Lyoufsi, Khadija Salih Alj, Kenza Bouqdir, El Habib Nfaoui ID 206: Deep Learning-Based Real-Time Semantic Segmentation for Autonomous Driving Lahbib KHRISSI*; Mohammed ES-SABRY; Hassan satori; nabil el akkad ID 225: Fine-Tuning Segment Anything Model (SAM) for Brain Tumor Image Segmentation ZAHRA FASKA*; Lahbib KHRISSI; Imadeddine MOUNTASSER; Khalid HADDOUCH; Nabil EL AKKAD ID 243: Overview of actor-critic frameworks for multi-intersection Traffic-Signal Control Meryem Mesbah, Abdelouahed Sabri, Ali Yahyaouy, Imad Lamouik ID 117: Optimizing Brain Tumor Diagnosis: Adaptive weights Selection via Lasso Regularization Othmane Mallouk, Nour-Eddine Joudar, Mohamed Ettaouil
Oral Session ESAI 8 : Data analysis and Serious games 16h00 – 18h30, Thursday, December 18, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 54: Quantum optimization for the Physician Scheduling Problem Baha mlaouhi ; chahid ahabchane*; iyed benslimen ID 132: A Focused Review on AI-Powered Intrusion Detection in IoT Mourad HANA*; Oussama El Haouari ; Ghizlane Khaissidi; Mostafa Mrabti ID 257: Data Collection, Datasets and Sensors for Pregnancy Risk Factors Prediction karima lakhdadi* ID 138: Interactive Tools and Digital Twins for Training in Industry 5.0: A Review Majda Arab*; Loubna Laaouina and Adil JEGHAL ID 218: Mathematical Optimization and Statistical Analysis of Hybrid GWO-SMA Algorithm for PID Control of DC Motors Mounime El Anaya*; Omar El Ogri; Amal Hjouji; Jaouad El-Mekkaoui
Oral Session ESAI 9 : Image and Video Processing 10h00 – 12h30, Friday, December 19, 2025 Chairs:	
ZOOM Link	----- LINK -----

ESAI 2025 Official Program

	ID 129: Fast and Efficient Hardware-Accelerated Lightweight CNN for Lung Disease Detection Using ARM Compute Library Emna Aridhi*; Kaouther Laabidi; Abdelkader Mami ID 123: Hybrid CNN-GOG Model for Robust Person Re-Identification and Trajectory Tracking Mohammad Nirou Jazi; Mohammed Ayoub Alaoui Mhamdi*; Madjid Allili ID 53: Soil quality classification using deep learning Ouahj khaldi*; Fouad Slaoui Hasnaoui; Semaan Georges ID 66: Real-Time Railway Maintenance Inspection on Embedded Devices Fatih Erdeniz*; Ayhan Küçükmanisa ID 115: Unsupervised Adaptive Asphalt Pavement Damage Recognition Algorithm Based on Fuzzy C-Means Clustering YOUSSEF AOUNI*; Souad EL Moudni El Alami; Omar El Ogri; Jaouad EL-Mekkaoui; Mohammed Qachar; Ahmed Chigr ID 156: Optimizing Tomato Object Detection in Smart Agriculture with Attention-Augmented AI Vision Systems hayat SAHLAOUI*; El Arbi Abdellaoui Alaoui; Said Agoujil
Oral Session ESAI 10: Security and Wireless Network Technologies 10h00 – 12h30, Friday, December 19, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 93: A Modular Framework for Transcription, Diarization, and Language-Adaptive Summarization of Multi-Party Conversations Hasna El Maizi; Rachid FATEH*; Mathieu Pouliquen; Kaoutar AHED; Yasmine LAMARI; Miloud Frikel ; Said SAFI ID 221: GNN-Ensemble Framework for Misinformation Detection on Social Media Alson Prasai; Mohammed Ayoub Alaoui Mhamdi*; Madjid Allili ID 63: Efficient and Precise Cheat Detection with Deep Learning ilhame KHABBACHI*; ghali MDAGHRI-ALAOUI; Abdelhamid ZOUHAIR ID 194: A Comparative Study of Automatic Migration from Monolith App to Microservices Jalal Zairi* ID 2: End-to-End WiFi CSI Sensing Framework for Accurate and Privacy-Preserving Activity Recognition hicham boudlal*
Oral Session ESAI 11: Renewable Energies and IA 10h00 – 12h30, Friday, December 19, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 235: A Transformer-based Time Series Model for State of Charge Forecasting for Electric Vehicles Hajar EL MIRI*; Mehdi NAJIB; Mohamed BAKHOUYA; Ahmed NAIT SIDI MOH ID 189: Dynamic Portfolio Management Using Dual-Model Proximal Policy Optimization Chaimae Khaled*; Badr Hirchoua; Mustapha Hain ID 37: Optimizing HVAC Systems through Temperature Prediction: A Regression Model Approach for Energy Efficiency in Buildings

ESAI 2025 Official Program

	DOUNIYA SBABOU*, Wiam Ayrir, Ahmed Ait Errouhi, Driss Benhaddou ID 224: FPGA Implementation of Chaos-Enhanced Bat Algorithm for Real-Time Constrained Engineering Optimization Rabab Ouchker; Ismail Mchichou*; Mohamed Amine Tahiri; Hicham Amakdouf ID 232: Minimizing Overfitting and Enhancing Computational Efficiency by Reducing Redundant Features Nourdinne El Gamouz; Amine Sallah*; Elarbi Abdellaoui Alaoui; Abdelaaziz Hessane; Said Agoujil ID 242: Integrating Fraud Detection into Insurance Risk Prediction via Machine Learning Hamza Errahibi, Fatima Zahra Abbour, El mehdi Lghaouch, Yman Chemlal, Mohamed Azzouazi
Oral Session ESAI 12 : Embedded systems and applications 10h00 – 12h30, Friday, December 19, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 125: Grey wolf Optimization-Based nonsingular fast fixed time sliding mode Control with Fixed-Time Observer for Quadrotor system Mouna Lhayani*; Ahmed ABBOU; Yassine El Houm ID 77: Architectural Analysis of a Lightweight Autonomous Vehicle Simulator leila kelmoua*; Zakaria HAJA; MOHAMMED RAHMOUNE; Jamal Berrich; Toumi Bouchentouf ID 19: Real-Time Localization of Short-Circuit Faults in Power Systems Based on the Triangulation Principle for Protection Relays Polster kader MBAKOB NDAGOUA*; Fouad Slaoui-Hasnaoui; Semaan Georges ID 15: Intelligent SOC Estimation Method for CC–CV Wireless Electric Vehicle Charger Marouane EL ANCARY*; Hassan El Fadil; Abdellah Lassioui; Mohammed Chiheb; Yassine El; Anwar; Hafsa Abbade ID 264: Responsible Artificial Intelligence in Project Management Sara Kacimi*; Fatima Bennouna
Oral Session ESAI 13 : Artificial intelligence 16h00 – 18h30, Friday, December 19, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 150: Human Factors In Cyber Incident Response: Mitigating Biases, Enhancing Communication, And Optimizing Tool Usability ANAS HARCHI*; TOUMI Hicham; TALEA Mohamed ID 26: Artificial Intelligence -Augmented Urban Theory: Modelling Divergence in Rank-Size Systems Rokia bendaoud*, M’hamed El Mouloudi ID 94: Artificial Intelligence in Public Sector Governance: A Cross-Sectoral Approach to Enhancing Commercial Justice, Business Experience, and Health System Performance in Morocco ARAB Younes; Loubna El Ouadoudi; AKDIM MOHAMMED; Waleed Joud*; Abid mustapha; ROUCHDY MOHAMED ID 207: An Empirical Comparison of Federated Learning Algorithms: No One-Size-Fits-All Mohammed Nechba*, Bessam Abdulrazak, Abdellatif El Afia ID 48: Using Chatbots to Develop Students’ Communication and Mediation Skills: Experience of Integrating Ready-Made AI Solutions into Academic Courses Liudmyla Ilich*; Olena Akilina; Victor Zvonar ID 149: Machine Learning Approaches for Early Warning of Stock Market Crashes Wafae Saifi*; Said Nouh; Said Bahassine; Imrane Chemseddine Idrissi

ESAI 2025 Official Program

Oral Session ESAI 14 : Data Analysis 16h00 – 18h30, Friday, December 19, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 188: Optimizing Cloud Data Warehousing Costs Through Redundancy Elimination and Storage-Aware Automation Junaith Meeran Haja Mohideen ID 208: VMD combined with correlation-based feature selection technique and Extra-trees classifier for EEG epilepsy detection Omar BAMAAROUF* ID 47: Self-Supervised Heterogeneous Graph Matching for CV-Job Recommendation with Cross-Encoder Reranking Ibtihal Khlif*; Abdelmounaim Kerkri; Mohammed Aissaoui ID 184: A Data-Driven Machine Learning Approach to Assessing Professors' Digital Maturity in Moroccan Higher Education Abdelkarim Taam*; Amine Amar; Adil El Makrani ID 234: Advanced Trilingual RAG Framework: Progressive Architectures for Robust Educational Question Answering Aymane Sbai, Imane Guessous, and El Habib Nfaoui,
Oral Session ESAI 15 : Fuzzy and Expert systems 16h00 – 18h30, Friday, December 19, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 221: GNN-Ensemble Framework for Misinformation Detection on Social Media Alson Prasaj; Mohammed Ayoub Alaoui Mhamdi*; Madjid Allili ID 95: Hybrid LSTM-GAT Model with k-Nearest Neighbors for Accurate Multi-Agent Vehicle Trajectory Prediction Chaymae Rami; Mohammed Ammar; Youness Bouhout; Ibrahim Ouahbi; Khalid El Makkaoui* ID 60: Clustering Student Profiles with K-Means and HAC for Future Adaptive Virtual Learning Agents Ghalia MDAGHRI-ALAOUI*; Ilhame KHABBACHI; Abdelhamid ZOUHAIR; El Mokhtar EN-NAIMI ID 147: Recommender Systems in E-Commerce: Taxonomy, Challenges, and a Roadmap for Scalable Personalization HOUDA EL BACHRI* ID 157: Noise Removal from ECG Signals Using Generative Adversarial Networks Mohamed SRAITHI*; Amir HAJJAM EL HASSANI; Younes JABRANE; Emmanuel ANDRES
Oral Session ESAI 16 : Artificial Intelligence and Embedded Systems 16h00 – 18h30, Friday, December 19, 2025 Chairs:	
ZOOM Link	----- LINK -----
	ID 200: AI-Enhanced Chaotic Encryption vs Blockchain Frameworks for Embedded Medical Imaging Security Imane ARIOUA*; Houssam BOUARDI; Said HRAOUI; Hakim fadili ID 55: Towards Intelligent Security: Embedded AI and Multi-Sensor Data Fusion for Threat Detection zineb lazrak*; Anas Bouayad; Marwa Boumaiz ID 161: Genetic Algorithm-Driven Hyperparameter Optimization for FedProx in Federated Learning Abdelkhalek Haddany*; Taoufyq Elansari; Brahim Aksasse; Mohammed Ouanan ID 97: Embedded System Controlled and Supervised Using LabVIEW

	ouadjih khaldi*; Fouad Slaoui Hasnaoui; Georges Semaan ID 21: Design of a Compact and Highly Selective Coplanar Bandpass Filter for ISM Band Applications SOUFIANE EL MAIMOUNI*; FOUAD AYTOUNA; JAMAL ZBITOU; Stéphane GINESTAR; Mohammed EL GIBARI
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