The 4th International Conference on Advances in Communication Technology and Computer Engineering

29-30 November 2024
Marrakech, Morocco

Hybrid Conference

Conference Program

ABOUT THE CONFERENCE

In recent times, there has been a remarkable surge in the advancement of emerging technologies, primarily driven by the expanding global population, particularly in urban areas. This growth has resulted in a significant acceleration of research and innovation, giving rise to a novel concept known as the smart city. This concept has emerged at the intersection of two powerful trends: the rapid urbanization of humanity and the digital revolution. Cities are now equipped with information and communication technologies, aimed at providing decision-making tools to enhance urban functionality.

Artificial Intelligence (AI) and the Internet of Things (IoT) have become indispensable technologies across various sectors. From agriculture and industry to healthcare, the applications of AI and IoT are vast and limitless. While these technologies are extensively employed in developed countries, their implementation in emerging nations is still in its early stages. These countries, heavily impacted by the COVID-19 pandemic in terms of healthcare and economy, now face an urgent need to adopt new solutions for sustainable development challenges.

With the aim of creating a common platform, the 4th International Conference on Advances in Communication Technology and Computer Engineering is scheduled to take place from 29-30 November 2024 in Marrakech, Morocco (Hybrid Mode). This conference aims to bring together innovative scientists, professors, research scholars, students, and industry experts in the field of Computing and Communication.

There were 250 paper submissions from 15 countries. Each submission was reviewed by at least three chairs or PC members. We accepted 110 regular papers (44%).

We would like to thank all authors and reviewers for their work and valuable contributions. The friendly and welcoming attitude of conference supporters and contributors made this event a success!

Conference Chairs

THE CONFERENCE TOPICS

Track 1: Communication Networks

- Wireless Communications
- Mobile Ad-Hoc Networks
- Software Defined Networks
- Information Theory and Coding
- Cloud Communications and Networking: Fog/Edge/Cloud
- Wearable Network and Systems
- Personal Communication Systems
- Vehicular Networks and Applications
- M2M and MTC Communications
- Internet of Things
- Architecture and protocols
- Satellite Communication
- Quantum Networking
- Qos Provisioning and Architectures
- Computer Security
- Network Security
- Cyber Security

Track 2: Computational Intelligence

- Big Data
- Data Mining
- Artificial Intelligence
- Evolutionary Algorithms
- Swarm Intelligence
- Fuzzy Sets and Vague Sets
- Hybrid Computational Intelligence
- Gamification / Game Technologies
- Digital Public and Policy Engagement Spaces
- Computer Vision
- Soft Computing
- Decision Support and Decision making
- Image Processing

Track 3: Embedded Systems and Smart Applications

- Industry 4.0
- Robotics
- Smart Cities
- Smart Grid
- Green Energy
- Renewable Energy and Storage
- Smart Healthcare
- Smart Agriculture

CONFERENCE COMMITTEE

General Chairs

- Mariya Ouaissa, Cadi Ayyad University, Marrakech, Morocco
- Zakaria Boulouard, Hassan II University, Casablanca, Morocco
- Celestine Iwendi, University of Bolton, UK

Technical Program Chairs

- Mariyam Ouaissa, Chouaib Doukkali University, El Jadida, Morocco
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- Hanane Lamaazi, UAE University, Al Ain, United Arab Emirates

Special Session Chairs

- Francis Morrissey, University of Bolton, UK
- Samir Anter, Hassan II University, Casablanca, Morocco

Track Chairs

- **TRACK I: COMMUNICATION NETWORKS**
  Inam Ullah Khan, Multimedia University, Malaysia
- **TRACK II: COMPUTATIONAL INTELLIGENCE**
  Hajar Moudoud, University of Sherbrooke, Sherbrooke, Canada
- **TRACK III: EMBEDDED SYSTEMS AND SMART APPLICATIONS**
  Najib El Ouanjli, Moulay Ismail University, Meknes, Morocco

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CONFERENCE KEYNOTES

Prof. Dr. Mohammed M. Alani
Rochester Institute of
Technology, Dubai, UAE

Prof. Dr. Mohammed M. Alani holds a PhD in Computer Engineering with specialization in network security. He has worked as a professor, and a cybersecurity expert in many countries around the world. His experience includes serving as VP of Academic Affairs in the United Arab Emirates, network and security consultancies in the Middle-East, and Cybersecurity Program Manger in Toronto Canada. He currently works as a Cybersecurity Professor at Rochester Institute of Technology, Dubai, UAE. He has authored 4 books in different areas of networking and cybersecurity along with many research papers published in highly ranked journals and conferences. He also holds many industrial certifications such as Security+, Cybersecurity Analyst+ (CySA+), PenTest+, CompTIA Advanced Security Practitioner+ (CASP+), Server+, Cisco Certified Network Associate, CCAI, Microsoft Azure Data Science Associate, and Microsoft AI Fundamentals. His current interests include applications of ML in cybersecurity, and ML security.

Prof. Dr. Celestine Iwendi
University of Bolton, United
Kingdom

Prof. Dr. Celestine Iwendi is an IEEE Brand Ambassador. He has a PhD in Electronics Engineering, ACM Distinguished Speaker, a Senior Member of IEEE, a Seasoned Lecturer and a Chartered Engineer. A highly motivated researcher and teacher with emphasis on communication, hands-on experience, willing-to-learn and a 21 years technical expertise. Celestine has developed operational, maintenance, and testing procedures for electronic products, components, equipment, and systems; provided technical support and instruction to staff and customers regarding equipment standards, assisting with specific, difficult in-service engineering; Inspected electronic and communication equipment, instruments, products, and systems to ensure conformance to specifications, safety standards, and regulations. He is a wireless sensor network Chief Evangelist, AI, ML and IoT expert and designer. Celestine is an Associate Professor (Senior Lecturer) at the School of Creative Technologies at the University of Bolton, United Kingdom. He is also a Board Member of IEEE Sweden Section, a Fellow of The Higher Education Academy, United Kingdom and a fellow of Institute of Management Consultants to add to his teaching, managerial and professional experiences. Visiting Professor to three Universities and an IEEE Philanthropist.

Prof. Dr. Hajar Mousannif
Cadi Ayyad University, Morocco

Prof. Dr. Hajar Mousannif is a distinguished Full Professor at Cadi Ayyad University and Senior Lead at Katanemo, a tech startup based in Washington, USA, specializing in developing cutting-edge solutions in Generative AI and Large Language Models (LLMs). With over 18 years of experience in Computer Science and AI, she has made significant contributions to the field, boasting a portfolio of more than 90 published papers and holding two AI patents. Not only has she played a pivotal role in academia, but she has also been instrumental in fostering innovation through her entrepreneurial endeavors. Hajar's influence extends beyond her research achievements; she has founded a Master's program in AI and Data Science, received prestigious awards such as the L'Oréal-UNESCO Award, and was recognized as the GOLD winner of the WomenTech Global AI Inclusion Award.
Her impact reverberates globally, as she fosters collaboration and influence within the worldwide AI community, bridging the gap between academia, public sectors, and industry stakeholders.

Prof. Dr. Zakaria Abou El Houda
INRS-EMT, Canada

Pr. Dr. Zakaria Abou El Houda is a Professor at the Energy, Materials, and Telecommunications Center of the National Institute of Scientific Research (INRS-EMT), Canada. He is a member of the INRS-UQO Joint Research Unit in Cybersecurity. He has been contributing to significant research projects on the application of machine learning for intrusion detection systems, and studying the explainability and robustness of these systems. He has extensive research experience in the security of next-generation networks. His current research interests include IoT, ZSM security, and Blockchain.

CONFERENCE PROGRAM

Time zone in GMT+1

November 29, 2024

Time	Session
8:30 – 9:00	**Registration**
9:00 – 09:30	**Opening Speech**
9:30 – 10:30	**Keynote 1: Prof. Dr. Hajar Mousannif** Chair: Prof. Khadija Slimani Topic: From Large Language Models to Small Language Models: Challenges and opportunities
10:30 – 11:00	**Break**
11:00 – 12:00	**Keynote 2: Prof. Dr. Zakaria Abou El Houda** Chair: Prof. Zakaria Boulouard Topic: Edge Intelligence-Driven IoT security: Challenges and Opportunities
12:00 – 14:15	**Lunch Break**
14:15 – 15:45	**Physical Session I: Computational Intelligence** Chairs: Prof. Mohamed Amine Chadi Prof. Samir Anter **Online Session I: Communication Networks 1** Chairs: Prof. Latifa Er-rajy Prof. Meriem Houmer
15:45 – 16:00	**Break**
16:00 – 17:30	**Physical Session II: Communication Networks 1** Chairs: Prof. Abdellah Nabou Prof. Jihane Gharib **Online Session II: Computational Intelligence 1** Chairs: Prof. Mariya Ouaissa Prof. Ahmed Oussous **Online Session III: Embedded Systems and Smart Applications 1** Chairs: Prof. Mariyam Ouaissa Prof. Sarah El Himer

November 30, 2024

Time	Session
9:00 – 09:45	**Keynote 5: Prof. Dr. Mohammed M. Alani** Chair: Prof. Yassine Maleh Topic: Combating Security Challenges in Internet-of-Medical-Things **Online Session IV: Embedded Systems and Smart Applications 2** Chairs: Prof. Farag Edghiem Prof. Sarah El Himer
9:45 – 10:00	**Break**
10:00 – 12:00	**Special Session II: Multi-sectoral AI: Current Provisions and Future Directions** Chairs: Prof. Youssef Mourdi Prof. Hasna Elalaoui Elabdellaoui **Physical Session III: Embedded Systems and Smart Applications** Chairs: Prof. Youssef Gahi Prof. Ilyass Ouazzani Taybi **Online Session V: Communication Networks 2** Chairs: Prof. Inam Ullah Khan Prof. Kishor Kumar Reddy C
12:00 – 14:00	**Lunch Break**
14:00 – 14:45	**Keynote 4: Prof. Dr. Celestine Iwendi** Chair: Prof. Zakaria Boulouard Topic: Next Generation Artificial Intelligence **Special Session I: AI for Earth: Innovations in Geoscience and Environmental Science** Chairs: Prof. Abdessalam Ouallali Prof. Abdeslam Taleb
14:45 – 16:15	**Physical Session IV: Communication Networks 2** Chairs: Prof. Mariyam Ouaissa Prof. Tarik Hidar **Online Session VI: Computational Intelligence 2** Chairs: Prof. Mahmoud El Hamlaoui Prof. Salma EL Hajjami **Online Session VII: Computational Intelligence 3** Chairs: Prof. Mariya Ouaissa Prof. Safae Laqtib
16:15 – 17:00	**Closing Ceremony**

CONFERENCE SESSIONS PROGRAM

Special Session I	AI for Earth: Innovations in Geoscience and Environmental Science	Chairs: Prof. Abdessalam Ouallali
Paper ID	**Koutoubia Room**	Prof. Abdeslam Taleb
01	**Environmental Monitoring and Nature-based solution of Coastal Erosion Risks in Saidia City, Northeast Morocco** Mohammed Hlal, Rida Azmi, Jérôme Chenal, El Bachir Diop, Meriame Mohajane, Meriem Adraoui, Seyid Abdellahi Ebnou Abdem, Imane Serbouti, Mariem Bounabi	
02	**Enhancing Scour Prediction Around Circular Bridge Piers: A Machine Learning Approach Combining Random Forest and Artificial Neural Networks** El Mehdi El Gana, Abdessalam Ouallali, Abdeslam Taleb	
03	**Leveraging Cloud Geospatial Technologies for Drought and Fire Risk Monitoring in Moroccan Oases: A Pathway to IoT- Wildfire based Digital Twin Platforms** Imane Serbouti, Jérôme Chenal, Mustapha Hakdaoui, Najib Kadiri	
04	**Deep Learning Semantic Segmentation for Gully Erosion Detection in Northern Morocco using Segformer Model** Manar El Kihel, Abdessalam Ouallali, Mohamed Rabii Simou, Soufiane Aafir, Laila Saafadi	
05	**Integrating GIS and ML in Tsunami Risk Management: A Review of Current Approaches and Future Directions** Ayoub Tahri, Mohamed Beroho, Soufiane Tichli, Hajar El Talibi, Said El Moussaoui, Khadija Aboumaria	
06	**Comparative Study of Nutrient and Heavy Metal Behavior along Oued Sebou** Ahlam Saad, Mohammed Moukhliss, Badr El Fathi, Abdeslam Taleb	

Special Session II	Multi-sectoral AI: Current Provisions and Future Directions	Chairs: Prof. Youssef Mourdi
Paper ID	**Bahia Room**	Prof. Hasna Elalaoui Elabdellaoui
07	**Automating Information Extraction from Textual Documents using NLP Techniques: A Review of Integration in Document Management Systems** Somaya Jabir, Hasna Elalaoui Elabdallaoui, El Hassan Abdelwahed, Laure Pecquerie, Mariem Malaine	
08	**Benefits and challenges of Supply chain and Artificial Intelligence: A short literature review** Jihad Naoum, Mohcine Bakhat, Hajar Raji	
09	**Artificial Intelligence in Fish Age Estimation from Otolith Images: Systematic Review** Mariem Malaine, Hasna Elalaoui Elabdallaoui, Ahmed Elkiram, Laure Pecquerie, Somaya Jabir	
10	**Efficiency of Algorithmic Optimizers in Predicting Keratoconus Progression using the Keratoconus Harvard Dataset** Najla Bnouachir, Mohamed Lachgar, Mustapha Aatila, Hamid Hrimech, Ali Kartit	
11	**The Integration of AI in Student Learning Assessment: Systematic Review** Khaoula Achour, Lahoussaine Ait Ounejjar, My Driss Laannaoui, Mohamed lachgar, Mustapha Ourahay	
12	**Exploring ChatGPT Informal Uses by Public Servants: A Case Study in the Moroccan Context** Said Najeh, Zainab Heyame, Khalid Oulad Seghir	
13	**XAI in Human Resources: Towards Transparent Employee Turnover Predictions** Abdelfattah Jamal, Karima Aissaoui	
14	**Enhancing Maternal Health Risk Prediction through Advanced Boosting Methods** Karim Karbout, Mohamed lachgar, Mohamed El Ghazouani, Hamid Hrimech, Chafik Baidada	

CONFERENCE SESSIONS PROGRAM

Physical Session I	Computational Intelligence Bahia Room	Chairs: Prof. Mohamed Amine Chadi Prof. Samir Anter
Paper ID		
15	**Deep Learning based AI Diagnostic Open API Architecture for Healthcare Applications** Fadoua Haraka, Smail Tigani, Mohammed Ouzzif, Khalid Bouragba	
16	**Improving Social Media Engagement through Text Regression and Sensitivity Analysis in Dialectal Moroccan Arabic** Soukaina Ettalibi, Abdeljalil El Ouardighi	
17	**Sentiment Analysis and Deep Learning-based Approach for E-Commerce Accurate Marketing: Case Study of Morocco** Nouhaila El Koufi, Essa E. Almazroei	
18	**Advanced Tree-based Ensemble Learning System for Prediction Accident Severity with Imbalanced Data Handling** Naima Goubraim, Zouhair Elamrani Abou Elassad, Naima El-Amarty, Hajar Mousannif	
19	**Fostering Innovative Learning through Augmented Reality** El Hassan Abdelwahed, Abdellah Nabou, Aimad Qazdar, Ennair Aya, Bellakhdar Omaima, Chebchoub Nouh Taha	
20	**Smart Recommendations: A Machine Learning Revolution** Mohamed Badouch, Mehdi Boutaounte, **Hasna Mahmoud**	
21	**A Conversational AI Solution for Smart Agriculture and Enhanced Crop Performance** Amolkumar N. Jadhav, Pravin B. More, Krishna Prasad K	

CONFERENCE SESSIONS PROGRAM

Physical Session II	Communication Networks 1 Bahia Room	Chairs: Prof. Abdellah Nabou Prof. Jihane Gharib
Paper ID		
22	**Improving Intrusion Detection in IoT Networks using Median PCA for Robust Dimensionality Reduction** Elkhadir Zyad, Achkari Begdouri Mohammed	
23	**Security Analysis of Smart Contracts: Evaluation of Vulnerability Detection Tools** Outman Guelida, Said Jai Andaloussi, Ouail Ouchetto	
24	**Integrate AI and IoT for Intelligent Traffic Control in Smart Cities** Abdellah Nabou, EL Hassan Abdelwahed, Salma Bouadaine, Ouiçal Sirgiane, **Hajar Ouhmidou** Cadi Ayyad University, Marrakech, Morocco	
25	**DoS Detection Enhancement in WSNs using Machine Learning and Voting Majority Approaches** Hajar Fares, Jihad Kilani, Asmaa El Harat, Youssef Baddi, Noura Aknin	
26	**Securing Smart Cities : The Role of AI in Protecting IoT Infrastructures** Mustapha Zeroual, Abderrazek Karim, Faysal Bensalah, Youssef Baddi	
27	**The Intersection of AI, Cybersecurity, and Healthcare Innovations** Abderrazek Karim, Mustapha Zeroual, Faysal Bensalah, Youssef Baddi, Hicham Toumi	

CONFERENCE SESSIONS PROGRAM

Physical Session III	Embedded Systems and Smart Applications Koutoubia Room	Chairs: Prof. Youssef Gahi Prof. Ilyass Ouazzani Taybi
Paper ID		
28	**The Impact of Trade Openness on Jordan's Economic Growth (2000-2023)** Yaser Arabiat	
29	**Predicting Dividend Distributions in the Jordanian Industrial Sector: Analyzing CEO Speeches using Machine Learning Techniques** Murad Abuaddous, Rania Al-Nsour	
30	**Industry 4.0 Research Landscape in Africa** Vincent Junior Phiri, Imane Fourkane, Atae Semmar, Ilham Battas, Mohamed El Moufid, Yassine Zahidi, Siham Benhadou, Fouad Moutaouakkil, Hicham Medromi	
31	**Towards the Development of Smart Medical Centrifuges: Characteristics, Challenges and Recommendations for Improvement** Alimatou Dicko, Safae Elhir, Ikram Debbarh, Hicham Medromi	

CONFERENCE SESSIONS PROGRAM

Physical Session IV	Communication Networks 2 Bahia Room	Chairs: Prof. Mariyam Ouaissa Prof. Tarik Hidar
Paper ID		
32	**Risks Assessment of AI Integration in Cybersecurity: A Synergistic Approach with FMECA and ISO 31000** Samya Elbarmile, Jihane Gharib, Youssef Gahi	
33	**Optimizing Cloud Resource Allocation with Dynamic Container Scalability: A Case Study using JMT** Adam Houmairi, El Mehdi Kandoussi, Yassine Maleh, Soufyane Mounir	
34	**Ausycse: Automated System for Correlating Security Events and Building an Ongoing Process for Vulnerability Dataset Generation** Khalid Bennouk, Nawal Ait Aali, Younès El Bouzekri El Idrissi, Dorra Mahouachi, Bechir Sebai, Abou Zakaria Faroukhi	
35	**Securing O-RAN with Zero Trust Architecture and Large Language Models** Hajar Moudoud, Zakaria Abou El Houda, Bouziane Brik	
36	**Threat-Modeling Techniques for the Internet of Things: A Survey** Zineb Nadifi, Mohamed Alhyan, Mariyam Ouaissa, Mariya Ouaissa, Ali Kartit	

CONFERENCE SESSIONS PROGRAM

Online Session I Paper ID	Communication Networks 1 Menara Room	Chairs: Prof. Latifa Er-rajy Prof. Meriem Houmer
37	**Enhanced ECC-based Authentication Protocol for IoT Devices M2C** Mohamed Ech-chebaby, Hicham Zougagh, Hamid Garmani, Zouhair El-Hadari, Noureddine Idboufker	
38	**Performance Evaluation of Machine Learning for Physical Layer Security in Vehicular Communications** Mouhcine Belkhadir, Raja Elassali	
39	**Blockchain and Smart Contracts Integration for Agriculture IoT Systems** Ilham Laabab, Abdellatif Ezzouhairi, Muhammad Haris Khan	
40	**PE Static Malware Analysis with Minimal Features** Mehdi Kmiti, Khalid El Gholami,Yassine Maleh	
41	**SOC Use Cases: Deployment, Challenges and Gap Assessment based on MITRE ATT&CK** Samir Achraf Chamkar, Yassine Maleh, Noreddine Gherabi	
42	**Automated QoS Enhancement in OneM2M: Traffic-Oriented Approach for MQTT and HTTP based on IoT SLA Variations** Jamal Et-Tousy, Abdellah Zyane	
43	**Software-Defined Named Data Networking for Efficient Healthcare Content Distribution** Sembati Yassine, Naja Najib, Jamali Abdellah	
44	**Bc-TBAC: A Blockchain based-Trust Model for Access Control in Multi-Agent Systems** Faycal Rahmoune, Nawal Ait Aali, Younes El Bouzekri El Idrissi	
45	**Performance Analysis of Software Defined based Vehicular Networks** Meryem Chouikik, Mariyam Ouaissa, Mariya Ouaissa, Zakaria Boulouard, Mohamed Kissi	
46	**Data Privacy-Preserving using Homomorphic Encryption: A Comparative Study** Majed M Alblooshi, Hanane Lamaazi, Mariya Ouaissa, Mariyam Ouaissa	

CONFERENCE SESSIONS PROGRAM

Online Session II Paper ID	Computational Intelligence 1 Menara Room	Chairs: Prof. Mariya Ouaissa Prof. Ahmed Oussous
47	**Enhancing the Prediction and Classification Performance of Alzheimer Diseases using Voting Rule of Ensemble Learning** Iman Aljubouri, Mostafa Ragheb, Mohamad Hamady, Issa Kamar	
48	**Mathematical Model-Driven Multi-Channel Matrix-based ECG Signal Features Transformation: Impact on Deep Learning Classification of Cardiac Arrhythmia** Dounia Bentaleb, Zakaria Khatar	
49	**Enhancing Lung Disease Detection using DCGAN-Augmented Chest X-Ray Images for CNN Training** Abdessamad Makan, Ikram El Asri	
50	**Transforming Multi-Lead ECG Signals into Gramian Angular Field Images for Enhanced Cardiovascular Disease Classification with Hybrid Deep Learning Models: A Case Study on Arrhythmia** Zakara Khatar, Dounia Bentaleb, Hamza Dhhouz, M'hamed El Mansouri	
51	**Big Data Frameworks for Mental Health Analysis** Aicha Oussous, Abderrahmane Ez-zahout, Soumia Ziti, Ahmed Oussous	
52	**Artificial Intelligence in Leukemia Diagnostics: Challenges, and Future Directions** Aya Achir, Ilham Battas, Ikram Debbarh, Fouad Moutaouakkil, Hicham Medromi	
53	**Optimized Deep CNN with Hybrid Segmentation for Tumor Classification in MRI using Exponential Cuckoo Algorithm** P. Sathish, Umadevi Ramamoorthy	
54	**Markerless Knee Angle Measurement: Advancements in Gait Analysis using Computer Vision** Safae Talaa, Abdelilah Jilbab, Moulay Hachem El Yousfi Alaoui, Khallassi Ihssane	
55	**Systematic Review of Prostate Cancer Diagnostic Techniques and the Role of Urinary Biomarkers and Artificial Intelligence in Enhancing Diagnostic Precision and Efficiency** Ayoub Slalmi, Nabila Rabbah, Ikram Debbarh, Ilham Battas, Hicham Medromi, Abdlmjid Abouriche	
56	**Lung Cancer Classification using Machine Learning and Data Augmentation** Rajaa Bouzidi Idrissi, Nabila Zrira, Hamid Ez-Zahraouy, Rajaa Sebihi	
57	**Improving the Robustness of Cardiovascular Disease Prediction Models through Adversarial Learning** Nisrine Berros, Youness Filaly, Fatna El Mendili, Younès El Bouzekri El Idrissi	
58	**Artificial Intelligence: A Catalyst for Innovation in University Management: A case of Sidi Mohammed Ben Abdellah University** Hanae Amrani, Zouheir Boussouf, Khawla Amrani, Ahmed Aftiss	

CONFERENCE SESSIONS PROGRAM

Online Session III	Embedded Systems and Smart Applications 1 Koutoubia Room	Chairs: Prof. Mariyam Ouaissa Prof. Sarah El Himer
Paper ID		
59	**Analyzing Telecommunication Infrastructure Index as Indicator of Digital Transformation: A Bibliometric Analysis** Melysa Zul Fitry, Indah Sidrawaty, Ainun Israni Arlina, Ihyani Malik, Andi Luhur Prianto, Nur Khaerah, Aqmal Reza Amri, Muhammad Younus	
60	**Integrating Technology into Audit Processes in Healthcare Establishments** Aziz Hantem, Kaoutar Roussi, Noura Youssoufi, Sanaa Belabbes, Sofya Seffar Andaloussi, Youssef Elmahdad	
61	**Optimizing the Performance of Hybrid Photovoltaic-Thermal Systems by Choosing the Input Temperature** Yassine El Alami, Ali Lamkaddem, Rehena Nasrin, Fatima Ouerradi, Noureddine El Moussaoui, Fatima Chanaa, Elhadi Baghaz	
62	**A Web-based Application for Assessing Pedestrian Physical Safety and Comfort in Urban Streets** Ahranyakumari Kumaraguruparan, Mohamed Fazil Mohamed Firdhous, Janaka Wijesundara, Gamini Weerasinghe	
63	**Digital Health Transformation and Decision-Making in Africa** Aumaima Wahbi, Karim Khaddouj, Hantem Aziz, Lahlimi Naoufal, Marouane Mkik, Ali Hebaz	
64	**Applying the MCDM VIKOR to Analyze Sustainability in the Automotive Wiring Industry's Supply Chain** Anass Hrich, Soufyane Mounir, Yassine Maleh	
65	**Secure Navigation for Intelligent Systems in Urban Environments: GPS Data and INS Raw Measurements Integration Using EKF to Mitigate GPS Failure** Mohammed Aftatah, Khalid Zebbara, Soufiane El Asri, Asmaa Benchama	
66	**Navigating the Talent Challenge in Industry 4.0: A Bibliometric Review** Nada Alami, Rania Larbi, Hamza Boujida, Laila Alami Kasri, Malika Akioud, Issam Debbagh	
67	**Smart Medical Bracelets: A Comprehensive Survey and Innovation Proposal** Kawtar El Amri, Nabila Rabbah, Yousra Louhab, Ibtissam Khalfaoui, Hicham Medromi, Nadia Machkour	

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Online Session IV	Embedded Systems and Smart Applications 2 Menara Room	Chairs: Prof. Farag Edghiem Prof. Sarah El Himer
Paper ID		
68	**Enhanced Patch Antenna Performance using Metamaterials for 6G and Biomedical Applications** Siraj Younes, Foshi Jaouad, Saidi Alaoui Kaoutar	
69	**Navigating the Evolution & Management of AI-Driven Data Platforms: An In-Depth Review & Expert Analysis** Vaishali Mishra, Ram Chandra Sachan, Rishit Lakhani	
70	**Design of an Isolated Wind Emulator: Application Of IRFOC Control for Induction Motors** Hana Zekraoui, Taoufik Ouchbel, Mohamed El Hafyani, Mohammed El Fahssi, Tarik El Allaoui, Meriam Miraoui	
71	**From Fragmentation to Integration: Strengthening Morocco's Health Information System** Fatima Errkik, Vincent Junior Phiri, Issam Behja, Hicham Behja, Hicham Medromi	
72	**Evaluation the Effectiveness of Pearson Correlation in the Context of Solar Yield Prediction through Artificial Neural Networks** Khouili Oussama, Hanine Mohamed, Louzazni Mohamed	
73	**Enhancement of SOC Estimation Algorithm based on Machine Learning Multi-Method Fusion** Elmehdi Nasri, Tarik Jarou, Meryam ElMahri, Salma Benchikh	
74	**Comparing Three Flames Generated from Three Moroccan Biomass Combustion using CFD Modeling** Hafida Abouallal, Ayoub Najah El Idrissi, Nadia Dkhireche, Mohammed Ebn Touhami	
75	**Artificial Intelligence as a Lever for Improving the Financial Performance of Companies in the Real Estate Sector: Case of a Smart City Project in The Dakhla Oued-Eddahab Region.** Hafsa Azziouni, Kaoutar Roussi, Ahmad Outfarouin	

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Online Session V Paper ID	Communication Networks 2 Menara Room	Chairs: Prof. Inam Ullah Khan Prof. Kishor Kumar Reddy C
76	**Design of Smart Waste Management System using IoT** Shubham Kumar, Sarvesh Tanwar, Sachitr Razdan, Karan Kumar, Pradeep Hewage, Celestine Iwendi	
77	**Application and Evaluation of the Secured Blockchain Framework** Manish Kumar, Sarvesh Tanwar, M.S Prasad, Karan Kumar, Zakaria Boulouard, Adedapo Paul Aderemi, Celestine Iwendi	
78	**Quantum-Resistant UAV System using Lattice-based Key Agreement Protocol** Bodhisattwa Baidya, Atanu Mondal, Sadoon Hussain Abdullah, Abida Tahsin Tawfiq, Oroos Arshi	
79	**Analyzing Strategies for Ensuring Robust Information Security Management in a Smart City** Favour Chinaza Anajemba, Joseph Henry Anajemba, Celestine Iwendi	
80	**Zero-Trust Architecture in IoMT: Applications, Issues, and Further Research Directions** Ayobami P. Olatunji, Emmanuel Alozie, Hawau I. Olagunju, Ferguson O. Udensi	
81	**A Blockchain-based Medical Record Storage System for Healthcare Data Management** Mazharul Islam, Mubasshir Ahmed, Shakib Hossain, Niaz Ashraf Khan	
82	**AI-Driven Smart Contract Optimization for Scalable, Real-Time Threat Detection in Decentralized IoT Networks** Nitesh Upadhyaya, Dhanunjay Reddy Seelam, Chetan Agarwal, Shenson Joseph, Herat Joshi	
83	**Improving UAV Performance in Disaster Scenario using Deep Learning Enabled RSSI-Controlled Task Allocation** Abdur Rehman Khan, Hameedur Rahman, Farhood Nishat, Khadija Slimani, Saba Farooq Abbasi, Oroos Arshi, Inam Ullah Khan	
84	**Utilizing Adaptive Neuro-Fuzzy Inference Systems (ANFIS) for Intrusion Detection Systems** Jitender Sharma, Sonia, Karan Kumar, Zakaria Boulouard, Adedapo Paul Aderemi, Celestine Iwendi	
85	**Securing IoT Networks with Advanced Threat Detection through Ensemble Methods** Adedapo Aderemi, Celestine Iwendi, Thaier Hamid, Okwuchukwu Innocent Ani, Olayinka Anthony Ojo	
86	**Manipulating Internet Users to Divulge their Information: A Threat to Personal Data Protection** Raheemat Adefabi, Dipo Adewumi	

Online Session VI Paper ID	Computational Intelligence 2 Menara Room	Chairs: Prof. Mahmoud El Hamlaoui Prof. Salma EL Hajjami
87	**Exploring Machine Learning Algorithms for Predicting Student Performance** Raja Ouadad, Hicham Mouncif	
88	**Evaluating the Effectiveness of Smart Classroom Interfaces in Remote Learning Environments** Arpita Chakraborty, Utpol Kanti Das, Tanvinur Rahman Siam, Hasnain Ahmed	
89	**Adaptive Approach for Skills Assessment on MOODLE: Use of Big Data and Artificial Intelligence** Elhoucine Ouassam, Hamzaoui Radoine, Younes-Aziz Bachiri, Bouikhalene Belaid	
90	**Predicting the Impact of Digital Technology on Student's Academic Performance using Machine Learning with Local Interpretable Model-Agnostic Explanations** Md. Shamim Parvej, Md. Tahmid Hasan, Md. Azizul Islam, Jairul Islam, Ferdib-Al-Islam	
91	**Enhancing Text Difficulty Classification: Cutting-Edge Data Augmentation and Balancing Techniques** Naoual Nassiri, Sahar Saoud, Meriem Houme † , Ayoub Jibouni	
92	**Fuzzy-DistilBERT: A Novel Framework for Opinion mining using Fuzzified Input Features** Fatima Es-sabery, Ibrahim Es-sabery, Khadija Es-sabery, Bouchra el Akraoui	
93	**Refining Bengali Hate Speech Detection: Multi-Label Classification using RNN and LSTM** Mominul Islam, Md Sanjid Hossain, Md Monjurul Islam, Md Abul Hossain Murad, Sadman Sakib Niloy, Md. Sanzidul Islam, Touhid Bhuiyan Islam	
94	**Enhancing Sentiment Analysis Accuracy in E-commerce: An Integrated NLP Approach to Amazon Review Classification** Md. Saimim Islam Khan Hamim, Md. Alif Sheakh, Ishtiaque Ahmed, Israt Jahan, Md Rafiuddin Siddiky, Md Mahadi Hasan, Taminul Islam	
95	**BornoNet: A Robust Deep Learning Framework for Bangla Handwritten and Printed Characters Recognition** Sujoy Kar, Arif Hossain, Md. Moradul Siddique, Tahmina Islam, Syed Md. Galib	
96	**Towards Efficient Code Documentation: A Dataset for Automated Comment Generation in Java** Mohamed Cherradi, Aziz Khamjane, Anouar Ragragui	
97	**Categorical Data Encoding Technique using Probability Distributions of Variables across a Tabular Dataset** Adama Samaké, Ismael Koné, Lahsen Boulmane	
98	**A Comparative Performance Analysis of Resampling Techniques on Emotion Recognition in Online Learners Textual Data** Hajar Makhoukhi, Sarra Roubi	

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Online Session VII	Computational Intelligence 3 Koutoubia Room	Chairs: Prof. Mariya Ouaissa Prof. Safae Laqtib
Paper ID		
99	**XS2A: A Platform for Explainable Sentiment Analysis in Arabic Comments** Youssef Chafiqui, Houda Anoun, Latifa Aloiradi, Fatima Ezzahraa Nazih	
100	**Low-Modeling: Leveraging Transformer-based Models for Automated Model Generation** Nihal Salih, Mahmoud El Hamlaoui, Tarik Fissaa	
101	**Deep Learning for Video Captioning: A Review** Zakaria El Idrissi, Mohamed-Amine Chadi, Samar Mouchawrab	
102	**Solar Energy Forecasting using TinyML Techniques: A Comprehensive Survey** Naima El-Amarty, Chaimae, Chekira, Hakim El Fadili, Saad Dosse Bennani	
103	**Quantum Artificial Intelligence: Bridging AI and Quantum Computing for Next-Generation Problem Solving** Shenson Joseph, Herat Joshi, Md. Mehedi Hassan, Kirankumar Kulkarni, Onkar Mayekar, Nitesh Upadhyaya	
104	**A Comparative Analysis of Deep Learning and Machine Learning Models for Fruit and Fruit Disease Recognition: Applications to Citrus, Guava, and Mango** Zarif Wasif Bhuiyan, Md. Rakib Rana, Monayem Hossian Limon, Sayeda Rahnuma Akthar, Md. Tarek Habib, and Mahady Hasan	
105	**Assessing the Research Scene of Green AI via Bibliometric Analysis** Michael Rabiu Abdulmalik, Ebuka Ibeke, Chinedu Pascal Ezenkwu, Celestine Iwendi	
106	**A Comparative Study of Deep Learning Models for Plant Leaf and Disease Recognition in Jackfruit, Rice, and Rose** Zarif Wasif Bhuiyan, Monayem Hossian Limon, Md. Rakib Rana, Sayeda Rahnuma Akthar, Md. Tarek Habib, Mahady Hasan	
107	**From Black Box to Glass Box: A Model-Driven Engineering Approach for Explainable AI** Mohamed Amine El Youssr, Mahmoud El Hamlaoui, Youness Laghouaouta	
108	**Deep Learning-based Traffic Sign Detection and Regression using YOLOv10** Mohammed Chaman, Hamad Dahou, Hlou Laâmari, Abdelkader Hadjoudja, Omar Mouhib	
109	**Advancements in Traffic Signal Control: A Review of Reinforcement Learning and Deep Learning Approaches** Sheilina Choudhary, Sonia, Karan Kumar, Anitya Kumar Gupta, Harshit Sharma, Pradeep Hewage, Eugen Harinda, Celestine Iwendi	
110	**Comparative Study of I3D and SlowFast Networks for Spatial-Temporal Video Action Recognition** Khadija Lasri, Jamal Riffi, Khalid el Fazazy, Adnane Mohamed Mahraz, Hamid Tairi	

Welcome to the 4th International Conference on Advances in Communication Technology and Computer Engineering

ICACTCE 2024 – Online Mode Schedule

	Sessions Links			
	Event	**Date**	**Time**	**Links Meeting**
DAY 1	Opening Speech	29-Nov-24	09:00 AM - 09:30 AM	Link
	Keynote 1: Prof. Dr. Hajar Mousannif		09:30 AM - 10:30 AM	
	Keynote 2: Prof. Dr. Zakaria Abou El Houda		11:00 AM - 12:00 AM	
	Online Session I: Communication Networks 1	29-Nov-24	02:15 PM - 03:45 PM	Link
	Online Session II: Computational Intelligence 1	29-Nov-24	04:00 PM - 05:30 PM	Link
	Online Session III: Embedded Systems and Smart Applications 1			Link
Day 2	Keynote 3: Prof. Dr. Mohammed M. Alani	30-Nov-24	09:00 AM - 09:45 AM	Link
	Online Session IV: Embedded Systems and Smart Applications 2			Link
	Special Session II: Multi-sectoral AI: Current Provisions and Future Directions	30-Nov-24	10:00 AM - 12:00 AM	Link
	Online Session V: Communication Networks 2			Link
	Keynote 4: Prof. Dr. Celestine Iwendi	30-Nov-24	02:00 PM - 02:45 PM	Link
	Special Session I: AI for Earth: Innovations in Geoscience and Environmental Science			Link
	Online Session VI: Computational Intelligence 2	30-Nov-24	02:45 PM - 04:15 PM	Link
	Online Session VII: Computational Intelligence 3			Link