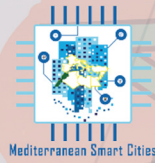


تحت الرعاية السامية لصاحب الجلالة الملك محمد السادس نصره الله
Under the High Patronage of H.M King Mohammed VI



Mediterranean Smart Cities Conference

"Unlocking the Future of Resilient Sustainable Urban Living"

2 - 4 May 2024 Martil and Tetuan-Morocco

Program and useful information





"It is up to the world to invent modes of development allowing our populations to access better-being while preserving the conditions of its sustainability. We must all work towards this goal and listen to the creative, the young, those who innovate and those who are preparing our world of tomorrow. Ladies and Gentlemen, It is the responsibility of States to carry forward visions of the future and to act to implement them, through major measures and structuring projects. However, public policies, no matter how ambitious they may be, remain fragile if they are not embraced by populations and civil societies. This is the essence of sustainable development. For development to be sustainable, solid, and rich, it must be driven by a vision shared by all actors in a society, where each decides and chooses to embody it in their own way."

Excerpt from the message of His Majesty King Mohammed VI, may God assist him, addressed to the participants of the Crans Montana Forum (FCM), on March 18, 2016 in Dakhla.

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- Sahar ATTIA, Cairo University, Egypt
- Salma Gaou, Ibn Zohr University, Morocco
- Shalini Aggarwal, Chandigarh University, Mohali, Punjab, India
- Shuhaili Talib, International Islamic University, Malaysia
- Soufian Ayad, Abdelmalek Essaadi University, Morocco
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- Vicent Botti, Polytechnic University of Valencia, Spain
- Vicente Julian, Polytechnic University of Valencia, Spain
- Viviana Mascardi, University of Genova, Italy
- Weibin Peng, Hangzhou Normal University, China
- Xianfei Yin, University of Twente, Netherlands
- Xinglong Wu, Politecnico di Milano, Italy
- Yasser Mesmoudi, Abdelmalek Essaadi University, Morocco
- Youness Dehbi, HafenCity University Hamburg, Germany
- Youssef Erhab, Helwan University, Cairo, Egypt
- Youssef Haddout, Ibn Zohr University, Morocco
- Zita Vale, GECAD/Polytechnic of Porto, Portugal

Program Overview

Venue: Convention Center, of the Bar

May 2

8 :30	Registration & Welcome
10 :00	Opening speeches and Award Ceremony
11 :00	Coffee & Networking Break
11 :30	<p>Panel 1: Global best practices for Sustainable Resilient Smart Cities</p> <ul style="list-style-type: none"> - Moderator: Dr. Hussein Kettani, Akhawayn University, Ifrane, Morocco - Prof. Suhono Harso Supangkat, Smart Cities Innovation Center, Bandung, Indonesia - Dr. Mohamed El Kayyali, IFGICT, USA - Veronica Ramirez del Valle, Smart Cities Cluster, Malaga, Spain (Remote) - Mr. Kishor Narang, Joint Working Group on Smart Cities Reference Architecture within SyC Smart Cities & ISO TC 268, India (Remote)
12 :30	<p>Panel 2: Smart Cities Development in the Islamic World: Lessons Learned and Future Direction (ICESCO)</p> <ul style="list-style-type: none"> - Moderator: Dr. Fahman Fathurrahman – ICESCO Expert at Science & Environment Sector - H.E. Dr. Mohamed Ali Habouha - Governor of Berkane Province. “Smart City Development in Berkane Province” - Dr. Sultan Al Sultan – CEO, Environmental Center of Remote Sensing, Saudi Arabia. “Smart Saudi Arabia Cities Digital Transformation” - Prof. Suhono Supangat – Director of SCCIC, Indonesia. “Smart Cities Indonesian Experience” - Dr. Adel Smeda - ICESCO Expert at Science & Environment Sector. “Strategy on Smart, Sustainable, and Resilient Cities in the Islamic World”
13 :30	Lunch Break
14 :30	<p>Panel 3: Smart Cities Planning, Architecture, Technologies & Governance (Remote)</p> <ul style="list-style-type: none"> - Moderator: Mohamed Essaaidi, EMSI, Morocco / IEEE IoT Global Cities Alliance - Jaewon Peter Chun, President, World Smart Cities Forum, Korea - Grace Kimaru, Urban Planner, Kenya - Victor Larios, University of Guadalajara, CUCEA Smart Cities Innovation Center, Mexico - Piyooosh Palan, Templar Executives, UK
15 :30	<p>Panel 4: Conception et Déploiement du Digit Twin pour la Smart City</p> <ul style="list-style-type: none"> - Moderator: Dr. Ali Benbrahim, FIWARE iHubs, Tunisia - Dr. Badr Ben Hichou, Majal Berkane, Morocco - Nassima Tabloul, Province de Berkane, Morocco - Mr. Omar Agodim, PNUD, Maroc - Dr. Stefano De Panfillis, Fiware, Italy (Remote)
16 :30	Coffee & Networking Break
17 :00	<p>Panel 5: Overview of key smart cities' initiatives from Morocco (DGCT)</p> <ul style="list-style-type: none"> - Moderator: Dr. Hussein Kettani, Akhawayn University, Ifrane, Morocco - Mr. Tarik Moudni, Director of STM, Morocco - Mr. Moussaid Hajjaj, Commune Benguerir, Morocco - Mr. Khassim, Commune ain Harrouda (Zenata), Casablanca, Morocco - Dr. Badr Ben Hichou, Majal Berkane, Morocco

18:00	<ul style="list-style-type: none"> - Mr. Samir Laaribya, Commune Marrakech - Mr. Hicham kassimi, Commune Tetouan - Mr. Mansouri, Commune Salé - Mr. Lotfi Bennani, INNOVATEL, Morocco
18:30	Closing Ceremony of Day 1
19:30	Inauguration and Visit of the Exhibition booths at the 'MSCC'2024 Expo'. Ecole Normale Supérieure - Martil

May 3	08:00				
	08:15				
	08:30	Registration			
	08:45				
	09:00				
	09:15	Keynote 1: Katarzyna Wasielewska-Michniewska How to make smart cities smart? Challenges and perspectives.			
	09:30				
	09:45	Keynote 2: Bashir Saleh Civil Engineering Techniques in Building Construction and Smart City Development			
	10:00				
	10:15	Keynote 3: Antonio J. Jara Local Digital Toolbox: Modeling the City for Decision-Making			
	10:30	S1-1 (Room 1)	S2-1 (Room 2)	S7-1 (Room 3)	
	10:45				Keynote 4: Dr. Abdelilah Kadili Tamkine Foundation, Morocco: Unleashing the Potential of ICT and AI: Redefining Education in Smart Cities
	11:00				
	11:15	Coffee & Networking Break			
	11:30				
	11:45				
	12:00	Posters Session (Posters room)	S1-2 (Room 1)	S3-1 (Room 2)	S4-1 (Room 3)
	12:15				
	12:30				
	12:45				
	13:00				
	13:15	Lunch Break			
	13:30				
	13:45				
	14:00				
	14:15	Keynote 5: Hamed Taherdoost Opportunities, Challenges, and Future Perspective of Blockchain and Big Data			
	14:30				
	14:45	Keynote 6: Ljiljana Trajkovic Data Mining and Machine Learning for Analysis of Network Traffic			
15:00					
15:15					
15:30					
15:45	S1-3 (Room 1)	S2-2 (Room 2)	S6-1 (Room 3)	Keynote 7: Karim Dasuki Smart Cities Innovation, Colombia	
16:00					
16:15				Keynote 8: Luis Castiella Smart Cities LATAM, Argentina : Developing Smart Cities in Latin America: description of the project Costa Rica infinite: innovative & resilient cities"	
16:30					
16:45	Coffee & Networking Break				
17:00					
17:15					
17:30					
17:45	S3-2 (Room 1)	S4-2 (Room 2)	S6-2 (Room 3)		
18:00					
18:15					
18:30					

May 4	08:00			
	08:30	Registration		
	08:45			
	09:00	Keynote 9: Ahmed Boutejdar		
	09:15			
	09:30	Keynote 10: Robert Laurini ICT-supported Smart City, quo vadis?		
	09:45			
	10:00	Keynote 11: Grace Kymaru Urban Planne & Cities and Climate Change Advocate, Kenya : Cities and Climate Change		
	10:15	S1-4 (Room 1)	S2-3 (Room 2)	S3-3 (Room 3)
	10:30			
	10:45			
	11:00	Coffee & Networking Break		
	11:15			
	11:30			
	11:45	Keynote 12: Iris Cuevas Martinez Sustainability impact assessment of Low Emissions Zones (Mobility)		
	12:00			
	12:15	S2-4 (Room 1)	S3-4 (Room 2)	S4-3 (Room 3)
	12:30			
	12:45	Keynote 13: Alenka Poplin Artificial Intelligence and Geogames: Can they improve the quality of life for the residents?		
	13:00			
	13:15	Lunch Break		
13:30				
13:45				
14:00				
14:15	Keynote 14: ABDELLAH EL H'JEUEJ BOUTGOURA BABLE Smart Cities			
14:30				
14:45	Keynote 15: Manuel Rocamora Regenerative - Adaptive - NetZero Smart Cities, JVs, Alliances, M&A, KSA, an overview of Smart Cities initiatives in KSA / GCC			
15:00	S2-5 (Room 1)	S4-4 (Room 2)	S5-1 (Room 3)	
15:15				
15:30	Keynote 16: Mike Brisbois, ELcon, Seattle, USA			
15:45				
16:00				
16:15				
16:30	Coffee & Networking Break			
16:45				
17:00	Closing & Hackathon Awards Ceremony			
17:15				
17:30				
17:45				
18:00				
18:15				
18:30				

Topics

S1	Community Engagement
	Resilience and Climate Action
	Sustainable Urban Planning
	Ecosystem Services
	Territorial Intelligence, Irrigation And Agriculture
	Sustainable Cities and Society
	Smart Tourism
S2	Cyber Security for Smart Cities
	Data Analytics for Smart Cities
	Digital Transformation
	Digital Inclusion
	PROCESS MINING
	Artificial Intelligence
S3	Computational Thinking
	Innovation in Infrastructure
	Intelligent Transportation Systems and Smart Mobility
	Smart Services
	Smart Building and Demotic Automation
S4	Urban Logistics Innovations and Smart Manufacturing
	Vehicle ad-hoc networks and wireless connectivity
	Integrated circuits and Embedded Technologies
	Internet of Things networking and communication
S5	Smart Electrical / Electronic devices, Microelectronic design
	Sensing and Smart Products for Energy
	Smart Energy
S6	Smart Grids
	Smart Education
S7	Smart Health

Hackathon Overview Program

May 2	
08:00	Team's Registration (Bar Association-Tetouan)
17:45	
18:00	Transport to ENS Martil
19:45	
20:00	Hackathon Kick-Off
20:45	
21:00	Workshop: The Business Model (Diaa Alhak EL FALLOUS)
21:45	
22:00	Brainstorming & First Steps
09:00	

May 3 (ENS Martil)	
08:00	Hackathon: Prototype Development
15:45	
16:00	Workshop: The Product design (Younes JAMAL)
16:45	
17:00	Hackathon: Prototype Finalization
19:45	
20:00	Workshop: The Pitch (Diaa Alhak EL FALLOUS)
20:45	
21:00	Pitch Preparation
09:00	

May 4 (ENS Martil)	
08:00	Projects' submission
08:45	
09:00	Hackathon: Pitches to the Jury
12:00	
12:15	Jury Deliberation
13:00	
13:15	Closing Ceremony & Award Distribution
14:00	

Foreword

Welcome to the **Mediterranean Smart Cities Conference** taking place in the Mediterranean cities of **Martil and Tetuan, Morocco**, where innovation meets urban evolution in the cradle of history. Join us for a journey through the vibrant and dynamic landscape of smart cities, where tradition meets technology, and ancient streets converge with futuristic possibilities.

This conference will bring together thought leaders, policymakers, urban planners, technology experts, and Ph.D. Students to explore the future of smart cities through different activities including keynote talks, technical sessions, panels, workshops, and tutorials.






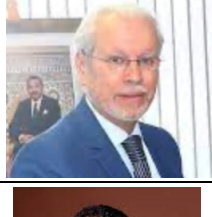


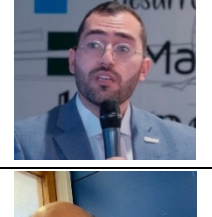

Mohamed Essaïdi
IEEE IoT Global City
Alliance/
EMSI, Morocco



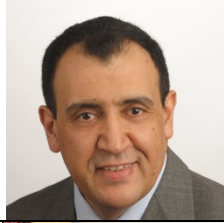
Ahmed Ben Dahmane
ENS Martil
Abdelmalek Essaadi
University, Morocco

MSCC '24 General Chairs

List Of Plenary Keynote Talks

<p>Friday 9:00 – 9:30</p>		<p>Katarzyna Wasielewska-Michniewska How to make smart cities smart? Challenges and perspectives.</p>
<p>Friday 9:30 – 10:00</p>		<p>Bashir Saleh Civil Engineering Techniques in Building Construction and Smart City Development</p>
<p>Friday 10:00 – 10:30</p>		<p>Antonio J. Jara Local Digital Toolbox: Modeling the City for Decision-Making</p>
<p>Friday 10:30 – 11:00</p>		<p>Dr. Abdelilah Kadili Tamkine Foundation, Morocco: Unleashing the Potential of ICT and AI: Redefining Education in Smart Cities</p>
<p>Friday 14:00 – 14:30</p>		<p>Hamed Taherdoost Opportunities, Challenges, and Future Perspective of Blockchain and Big Data</p>
<p>Friday 14:30 – 15:00</p>		<p>Ljiljana Trajkovic Data Mining and Machine Learning for Analysis of Network Traffic</p>
<p>Friday 15:30 – 16:00</p>		<p>Karim Dasuki Smart Cities Innovation, Colombia</p>
<p>Friday 16:00 – 16:30</p>		<p>Luis Castiella</p>

Saturday
9:00 – 9:30



Ahmed Boutejdar

Saturday
9:30 – 10:00



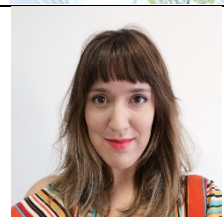
Robert Laurini
ICT-supported Smart City, quo vadis?

Saturday
10:00 – 10:30



Grace Kymarū
Urban Planne & Cities and Climate Change Advocate, Kenya :
Cities and Climate Change

Saturday
12:00 – 12:30



Iris Cuevas Martínez
Sustainability impact assessment of Low Emissions Zones
(Mobility)

Saturday
12:30 – 13:00



Alenka Poplin
Artificial Intelligence and Geogames: Can they improve the
quality of life for the residents?

Saturday
14:00 – 14:30



ABDELLAH EL H'JEOUEJ BOUTGOURA
BABLE Smart Cities

Saturday
14:30 – 15:00



Manuel Rocamora
Regenerative - Adaptive - NetZero Smart Cities, JVs, Alliances,
M&A, KSA, an overview of Smart Cities initiatives in KSA / GCC

Saturday
15:00 – 15:30



Mike Brisbois, ELcon, Seattle, USA

Detailed Sessions program

S1-1	Community Engagement Resilience and Climate Action Sustainable Urban Planning Ecosystem Services Territorial Intelligence, Irrigation And Agriculture Sustainable Cities and Society Smart Tourism
	Chairs: - Robert Laurini - Abdelfatah lahiala
May 3 10 :00 – 11 :00 (Room 1)	Seasonal assessment of coastal risks of the Moroccan Mediterranean coast between Ksar Sghir and Fnid'q, Morocco (ID-8) YOUSRA RGHIF, Damnati Brahim, Abdelmaoula El Meraoui The influence of demographic growth on Society (ID-18) El Houcine El Bazi, Jaouad Boumaajoune Exploring Feedforward Knowledge Management for Smart and Sustainable Cities (ID-19) Robert Laurini Geomarketing: Spatial consumer behavior and integration of the geographic dimension - Literature review (ID-28) NOUHA BEN AISSA Stakeholder involvement in sustainable urban development: An analytical approach to the Tangier case (ID-32) Jihane Salim, Mostafa Abakouy

S2-1	Cyber Security for Smart Cities Data Analytics for Smart Cities Digital Transformation Digital Inclusion PROCESS MINING Artificial Intelligence Computational Thinking
	<u>Chairs:</u> - Abdellatif EL AFIA - Abdelaaziz El Hibaoui
May 3 10 :00 – 11 :00 (Room 2)	Towards Effective Local Financial Cybercrime Detection using Machine Learning (ID-14) Marouane Dirchaoui, Abdallah Abarde Smart Cities: Catalyzing Circularity in Supply Chains (ID-21) Hanan AYOUBI, Moad EL KHARRIM, Yassine TABAA Dynamic Decomposition of Monolith Applications Into Microservices Architectures (ID-23) NASSIMA AIT MANSOUR, Hanae Sbai, Karim BAINA Towards A Framework for Building A Decision Support Systems For Customer Satisfaction Assessment In Tourism Sector (ID-24) Adnane Souha, Lamya Benaddi, Charaf OUADDI, abdeslam jakimi Digital Entrepreneurship: An Essential Leverage to Shaping the Smart Cities of the Future (ID-25) RIHAB TOUATI, SAID ASSAL

S7-1	Smart Health
	<u>Chairs:</u> - Yasser MESMOUDI - Otman Abdoun
May 3 10 :00 – 11 :00 (Room 3)	Enhancement of Diabetic Retinopathy Prediction-Based Capsule Network and DenseNet-121 Utilizing Wavelet Decomposition (ID-45) Mohammed ouhadj, JAMAL RIFFI, Chaimae Khodriss, MOHAMED ADNANE MAHRAZ, Ali YAHYAOUY, Meriem Abdellaoui, Idriss Benatiya Andaloussi, hamid tairi

	<p>Enhanced Brain Tumor Segmentation via Transfer Learning and Attention Mechanism (ID-49) Ilyasse ABOUSSALEH, JAMAL RIFFI, EL FAZAZY KHALID, MOHAMED ADNANE MAHRAZ, Hamid Tairi</p> <p>Smart City Healthcare Delivery Innovations : a Decade Review and Bibliometric Analysis (ID-65) Mohammed Amine LAFRAXO, Abdelmajid Soulaymani, Hinde Hami</p> <p>Enhancing Breast Cancer Detection Through Automated Classification with Optimized CNN Hyperparameters (ID-70) khadija aguerchi, Younes Jabrane, Maryam Habba</p> <p>Multi parameter Multilevel (MPML) Based Trust Management System for Healthcare (ID-83) Bhawana Ahire, Dr.S. Sakhare</p> <p>Enhancing LSTM Models for Human Activity Recognition in Health Smart Homes with SMOTE and Hyperparameter Tuning (ID-149) Mariam EL GHAZI, Noura AKNIN</p>
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Posters	<p>Chairs: - Ahmed Ben Dahmane - Abdelaaziz El Hibaoui</p>
	<p>Exploration of School Orientation using Principal Component Analysis (PCA): An Analytical Approach (ID-53) Lakchouch Noaman, Mohammed Lamarti Sefian</p> <p>Enhancing Road Safety: Automated Traffic Violation Detection and Counting System Using YOLO Algorithm (ID-59) ayoub CHAREF, Zahi JARIR, Mohamed Quafafou</p> <p>Long-range, low-power for IoT devices: The LoRa Network a review (ID-81) HASNAA BOUGADDOU, NAZHA CHERKAOUI, OMAR MOUHIB</p> <p>New Approach: Intelligent System-Based Object Detection in Smart Parking (ID-115) Mohamed hamza boulaich, SAID OHAMOUDDOU, hibatallah meliani, mohammed ali ennasar, abdellatif elafia</p> <p>Intelligent system-based Energy Consumption Monitoring using IoT and Machine Learning (ID-116)</p>

	<p>Mohamed hamza boulaich, SAID OHAMOUDDOU, hibatallah meliani, mohammed ali ennasar, abdellatif elafia</p> <p>Low-Cost Real-Time Fire Detection in Smart Cities: Leveraging AI and IoT (ID-129) SAID OHAMOUDDOU, Mohamed hamza boulaich, Hibatallah MELIANI, Mohammed Ali Ennasar , Abdellatif El Afia</p> <p>Smart Grid Security: Innovative Approaches for Threat Detection and Countermeasures (ID-132) Ujas Bhadani</p> <p>Security of open source learning management systems (LMS) (ID-148) EL AFOUI KAMAL</p>
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S1-2	<p>Community Engagement Resilience and Climate Action Sustainable Urban Planning Ecosystem Services Territorial Intelligence, Irrigation And Agriculture Sustainable Cities and Society Smart Tourism</p>
	<p><u>Chairs:</u> - Robert Laurini - Abdelfatah lahiala</p>
<p>May 3 11 :30 - 13 :00 (Room 1)</p>	<p>The impact of afforestation on climate change in the city- cast Study Kingdome of Bahrain (ID-40) ALI MOOSA, Raweya Almannaei</p> <p>Urban green space segregation: How do development and management practices reflect migration policy agendas? (ID-41) Lorenzo Laquidara</p> <p>Port waste management: Comparative Study of Ship generated waste system (ID-42) ANASS HAMRAOUI, Saad LissaneElhaq, Hamid Ech-Cheikh</p> <p>Improving Coastal and Port Management in Smart Cities with UAVs and Deep Learning (ID-51) Irem Bayraktar, Murat Bakirci</p>

S3-1	Innovation in Infrastructure Intelligent Transportation Systems and Smart Mobility Smart Services Smart Building and Demotic Automation Urban Logistics Innovations and Smart Manufacturing Vehicular ad-hoc networks and wireless connectivity
	<u>Chairs:</u> - Mohamed Chrayah - Bashir Saleh
May 3 11 :30 – 13 :00 (Room 2)	Digital Identity using Blockchain: Self-Sovereign Identity (SSI) for Employment Application for Organisations and Freelancers (ID-7) Firoj Ahamad SUSTAINABLE PATHS: STRATEGIES FOR EFFICIENT ROUTES IN REDUCING FUEL CONSUMPTION AND POLLUTANT EMISSIONS IN SAO PAULO (ID-10) Murilo Blasio Deformation monitoring surveys of roads and railways (ID-20) Christina Mickrenska , Roume Ivanov, Nevena Babunska-Ivanova Towards an Integrated Smart City Platform: A Prototype for Enhancing Urban Services (ID-30) Assia Tanji, Mohamed Essaaidi, Ghezlane Halhoul Merabet A review of reinforcement learning and deep reinforcement learning for coordination in intelligent traffic light control (ID-34) AICHA SAADI YOLOv8 Embedded Real-Time Traffic Light Adaptation for Enhanced Emergency Vehicle Integration in Autonomous Traffic Management (ID-37) Ali OMARI ALAOUI, Mariame Oumoulyte, Omaima EL BAHI, Merzougui Mohammed, EL ALLAOUI AHMAD

S4-1	Integrated circuits and Embedded Technologies Internet of Things networking and communication Smart Electrical / Electronic devices, Microelectronic design
	<u>Chairs:</u> - Fouad AYTOUNA - Otman EL Mrabet
May 3 11 :30 – 13 :00 (Room 3)	Process-Aware Internet of Things Model: A Discovery Method Using IoT Data and Process Mining Techniques (ID-9) Iman KODSSI, Sbai Hanae, KABIL Mustapha

	<p>Urban traffic management system based on Machine Learning technology (ID-16) imane ELBRAK, EN-NAIMI El Mokhtar, Mohamed ELBRAK</p> <p>A New Design of a Planar High Gain Base Station Antenna Array for 5G Cellular Communication (ID-47) EL GHAOUAL FARID, Zbitou Jamal, Oukaira Aziz, El Oualkadi Ahmed , Aourik Salaheddine</p> <p>Design and Optimization of MIMO Antennas for WiMAX/LTE/WLAN/5G Applications in Sub-6 GHz Wireless Communications (ID-48) Moussab CHBEINE</p> <p>Numerical study on the effect of thermal pad on thermal management of multi-chip LED COB (ID-55) HOUDA ELNOUINO, Othmane Bendaou</p>
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S1-3	<p>Community Engagement Resilience and Climate Action Sustainable Urban Planning Ecosystem Services Territorial Intelligence, Irrigation And Agriculture Sustainable Cities and Society Smart Tourism</p>
	<p><u>Chairs:</u> - Abdelfatah lahiala - MOHAMMED CHEKOUR</p>
<p>May 3 14:30 - 16:30 (Room 1)</p>	<p>Medicinal plants and green design in smart cities (ID-58) Zahra Mohebi, Hadi Ebadi</p> <p>A Sketch of a MDA Approach to Accelerate the Development of User Interfaces in Tourism Web Applications (ID-67) Lahbib Naimi, El Mahi Bouziane, abdeslam jakimi, Lahcen El Bermi</p> <p>A study of off grid environment friendly power suppling solution to telecom towers in NEOM (ID-75) Mazen Alkhrijh</p> <p>Giv: From Campus to Community- Mobile Application for Sustainable Sharing (ID-79) Basma Khatiri</p> <p>Leveraging AI and Deep Learning for Spiritual Focus in the Modern Muslim Experience (ID-84) Safouane Boudakkou, Abdelaziz El HIBAOU</p>

	<p>Multimodal Markov Fields Approach for Enhanced Segmentation of Aerial Images: Statistical Integration of CIEDE2000 Color Difference, Texture Features, and Edge Information (ID-91) Jamal Bouchti, Ahmed Bendahmane</p> <p>Enhancing Water Management in Jordan: A Fresh Tomato Water Footprint Analysis (ID-95) Ahmad Jamrah</p>
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S2-2	<p>Cyber Security for Smart Cities Data Analytics for Smart Cities Digital Transformation Digital Inclusion PROCESS MINING Artificial Intelligence Computational Thinking</p>
	<p><u>Chairs:</u> - AZIZ MAHBOUB - Abdellatif EL AFIA</p>
<p>May 3 14:30 – 16:30 (Room 2)</p>	<p>Exploring The Use of Robotic Process Automation in Smart Cities (ID-27) Mariame EL HAOUANI, Ahmed Bendahmane</p> <p>The role of digital transformation in the development of the smart city: a bibliometric analysis. (ID-29) HIND EL KARIMI</p> <p>Redefining Learning: A Study of 21st-Century Innovations for the Impact of SDG 4 (ID-44) Namreen Asif</p> <p>Blockchain and Smart Cities: Towards a Smarter and More Sustainable Urban Future (ID-56) yasser ELKOURI</p> <p>Crowd Understanding in Railway Station using Video Analytics and Hybrid Belief Rule Base (ID-57) Fadhil Hidayat, Ulva Elviani, Suhono Supangkat, Figo Agil Alunjati, Rezky Kinanda</p> <p>Modeling the volatility of cryptocurrencies (ID-66) MUSTAPHA KHALFOUNI, Mohammed Lamarti Sefian, Lakchouch Noaman</p>

	<p>The Impact of Earthquakes on Air Pollution: Machine Learning-Based Air Quality Analysis Following the Kahramanmaras, Earthquakes (ID-76) Furkan ERYILMAZ, Metehan GÜZEL, Mehmet Ulvi ŞİMSEK, İbrahim Kök, Suat Ozdemir</p> <p>DeBERTa-Enhanced Extreme Multi-Label Classification for Biomedical Articles (ID-80) Oussama NDAMA, BENSASSI Ismail, EN-NAIMI El Mokhtar</p> <p>People-Centric Smart City Services Measurement Using Garuda Smart City Framework (ID-110) Iqbal Santosa, Suhono Supangkat , Arry Akhmad Arman</p>
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S6-1	Smart Education
	<p><u>Chairs:</u> - Mohammed Lamarti Sefian - OUTMAN EL HICHAMI</p>
<p>May 3 14 :30 - 16 :30 (Room 3)</p>	<p>Transforming Student Advising in Smart Cities: A Deep Learning Conversational AI Chatbot (ID-26) Suha Assayed, Manar Al Khatib, Khaled Shaalan</p> <p>Exploring the Efficacy of Methods used in Student Orientation Systems: A Review (ID-31) Samira Reguragui, Ahmed Bendahmane</p> <p>Machine learning algorithms applied to post-bac academic guidance (ID-33) SALIM LAFDOUL, SANA BAADOU, Ahmed Bendahmane</p> <p>Exploring the Determinants of Student Long Jump Performance: A Comparative Analysis of Machine Learning Models (ID-39) MIDOUL KARIM, EL MOHAIJR Badr eddine EL MOHAIJR, El Hichami Outman, Adnan SOURI</p> <p>Smart Education, Robot-Prof: Principles of Programming for Personalized Pedagogy (ID-78) ELOTMANI Saber</p> <p>Cultural Heritage Preservation in the Digital Age: Balancing Tradition and Innovation in Mediterranean Smart Cities (ID-88) Aida Al hosni</p> <p>Rethinking Assessment Methodologies in the Era of Artificial Intelligence: Expanding Beyond ChatGPT's Scope (ID-90) Muhammad Nadeem, Wael Farag, Magdy Helal</p>

S3-2	Innovation in Infrastructure Intelligent Transportation Systems and Smart Mobility Smart Services Smart Building and Demotic Automation Urban Logistics Innovations and Smart Manufacturing Vehicular ad-hoc networks and wireless connectivity
	<u>Chairs:</u> - Mohamed Chrayah - Bashir Saleh
May 3 17 :00 - 18 :30 (Room 1)	Integrated ESP32 and MPU6050-Based GPS Tracking System for Advanced Transport Logistics Management (ID-38) SAMYA YAZGHI MOUBACHIR, Mohamed Chihabeddine Belaabda, Sahar Elouima The Living Lab Approach and the Challenges of Urban Mobility within a Moroccan Context: The Mediating Role of Open Innovation (ID-43) SOUFIANE EL BROUMI, OUMHANI EDDLANI, HICHAM EDDAHMOUNY Integrating UAV-Based Aerial Monitoring and SSD for Enhanced Traffic Management in Smart Cities (ID-50) Irem Bayraktar, Murat Bakirci Transformer Models for EV Charging Demand Forecasting: Comparing Attention Mechanisms (ID-52) Taniya Manzoor Estimation of Transmission Line Parameters in Modern Power Systems from Phasor Measurements (ID-61) Emmanuel Saldanha, Maria Pacheco, Ângela Ferreira ROBOT PATH PLANNING USING FUZZY TSUKAMOTO SIMULATED ANNEALING (ID-62) Hibatallah MELIANI, SAID OHAMOUDDOU, Hanaa El Afia , Mohamed hamza boulaich, Abdellatif El Afia Cooperative and Connected Mobility Services in the Cloud-Edge Continuum with Function As A Service Technology and AI-enabled Orchestration (ID-63) Antonio Lalaguna, Behnam Ojaghi , Paul Townend, Constantino Vázquez

S4-2	Integrated circuits and Embedded Technologies Internet of Things networking and communication Smart Electrical / Electronic devices, Microelectronic design
	<p>Chairs: - Fouad AYTOUNA - Otman EL Mrabet</p>
<p>May 3 17 :00 – 18 :30 (Room 2)</p>	<p>Design of a planar Transversal Signal Interference-Based Bandstop Filters for Millimeter-Wave Applications (ID-69) BAROU Salaheddine, Zbitou Jamal</p> <p>Normalized frequency calculation and associated dispersion fields profiles of a multilayered FGM structure (ID-71) Ismail Naciri, Rabab RAGHIB, Hassna KHALFI, LAHOUCINE ELMAIMOUNI, Abdou Benami, Hicham TRIBAK</p> <p>Ultra wideband cross-polarization conversion metamaterial unit cell stable to incident angles at X-band (ID-85) Youssef Barkal, Zbitou Jamal, Larbi EL Abdellaoui, Aziz Oukaira, Mostafa Hefnawi</p> <p>A New Design of a Microstrip BandPass Filter based on SRR Structure (ID-92) SOUFIANE EL MAIMOUNI, Fouad AYTOUNA, Zbitou Jamal</p> <p>A lightweight blockchain architecture for IoT based on delegated nodes (ID-93) EL GOUNTERY Yassin, Meryem Lasaad, Oualla Mohamed, abdeslam jakimi, Hassain Sadki</p> <p>Handover Detection based on Dimension estimation (ID-94) Adnane EL HANJRI</p>

S6-2	Smart Education
	<p>Chairs: - Mohammed Lamarti Sefian - Nadir El Morabit</p>
<p>May 3 17 :00 – 18 :30 (Room 3)</p>	<p>Intelligent recommendation systems: Literature review on recommendation techniques and their use in education (ID-96) SANA BAADOU, SALIM LAFDOUL, Ahmed Bendahmane</p> <p>Enhancing Personalised learning through smart education: A catalyst for workforce development in smart cities (ID-101) Youssef JDIDOU, Souhaib AAMMOU</p>

	<p>Smart guidance systems for Moroccan Students (ID-104) Samira Reguragui, Ahmed Bendahmane</p> <p>AI Chatbots Use Among Bachelor Students in Morocco : Perspectives and Concerns (ID-139) Kaoutar El Aida, Fatima Ezzahra Yassine, Mohamed Amine Lahiala, Imane El Kortbi, Fennane Moulay Maati Alaoui, Abdelfattah Lahiala</p> <p>Optimizing Student Classification in Smart Education using Factor Analysis by Deep Boltzmann Machines and a Deep Learning Approach Improved by Bayesian optimization (ID-142) Abde rrafik Laakel Hemdanou</p> <p>Integrating Blended Learning in Teacher Training: A Comprehensive Review (ID-145) MOHAMMED CHEKOUR, Nadir El Morabit, fouad elhars, Issam Benqassou, Abdelhamid Lechhab, Moulay Mustapha Hafid</p> <p>Modeling an expert system for learning to solve mathematical problems (ID-146) ASMAE BAHBAH</p> <p>Exploration of school orientation using Principal Component Analysis (PCA) (ID-138) Lakchouch Noaman, Mohammed Lamarti Sefian, MUSTAPHA KHALFOUNI</p>
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<p>S1-4</p>	<p>Community Engagement Resilience and Climate Action Sustainable Urban Planning Ecosystem Services Territorial Intelligence, Irrigation And Agriculture Sustainable Cities and Society Smart Tourism</p>
	<p><u>Chairs:</u> - Abdelfatah lahiala - MOHAMMED CHEKOUR</p>
<p>May 4 10 :00 – 11 :00 (Room 1)</p>	<p>CFD Simulation of Wind Load on tall Modified Building Shapes (ID-97) idrissi abdellah, Rachid El Amraoui, Hicham El Mghari</p> <p>Classification of Indoor CO2 Levels: Exploring the Impact of Humidity, Temperature, and Occupancy on Air Quality Using Machine Learning Model (ID-98) Yassine Dani, Naoual Belouaggadia, Mustapha Jammoukh, Hamza Ennadafy</p>

	<p>The impact of a city's architecture on thought processes (ID-105) Abdelilah BENTHAMI</p> <p>Smart cities and Tourist Experiences (ID-121) SALMI KACEM, HMIOUI AZIZ</p> <p>Feasibility Study of a Piezoelectric Footstep Power Generator for Smart University Campus (ID-134) Hatim Bamoumen, Hamza El Hafdaoui, Ahmed Khallaayoun</p>
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<p>S2-3</p>	<p>Cyber Security for Smart Cities Data Analytics for Smart Cities Digital Transformation Digital Inclusion PROCESS MINING Artificial Intelligence Computational Thinking</p>
	<p><u>Chairs:</u> - Abdellatif EL AFIA - Abdelaaziz El Hibaoui</p>
<p>May 4 10 :00 – 11 :00 (Room 2)</p>	<p>The Digital Transformation as a Lever for Territorial Development – Case Study of an Urban Municipality in Morocco (ID-82) zineb Aboulhouda, Zakaria BENJOUID, Salah eddine Bounou</p> <p>Light-PoEDDP: A Fast and Lightweight RSA-Based Proof of Possession of Outsourced Data & Correct Computation (ID-87) ABDEL ALI HARCHAOUI, Abdellatif Machti, ALI YOUNES, Abdelaaziz El HIBAOUI, Ahmed Bendahmane</p> <p>Optimizing City Services through Configurable Change Mining: Implementation of the Variability Change Tree Approach (ID-102) Asmae HMAMI</p> <p>Intelligent Agent Systems: Evolving Decision-Making Models and Applications (ID-106) Mohammed Amine BOUJIA</p> <p>Internal Audit 4.0: The Transformative Role of Artificial Intelligence (ID-107) MOHAMED CHARIF</p>

S3-3	Innovation in Infrastructure Intelligent Transportation Systems and Smart Mobility Smart Services Smart Building and Demotic Automation Urban Logistics Innovations and Smart Manufacturing Vehicular ad-hoc networks and wireless connectivity
	<u>Chairs:</u> - Mohamed Chrayah - Bashir Saleh
May 4 10 :00 – 11 :00 (Room 3)	Global Fuzzy Mamdani Simulated Annealing applied to traveling salesman problem (ID-64) Hibatallah MELIANI, Mohamed hamza boulaich, Hanaa El Afia, SAID OHAMOUDDOU, Abdellatif El Afia Single Row Facility Layout Problem using Fuzzy Larsen Simulated Annealing (ID-68) Hibatallah MELIANI, Mohamed hamza boulaich, SAID OHAMOUDDOU, Hanaa El Afia, Abdellatif El Afia Improving Waste Sorting Efficiency via CNN-Based Image Classification and Transfer Learning Employing VGG1 (ID-72) Laila AJANA FWM Crosstalk Reduction in 32-Channel DWDM Optical Network using Unequal Channel Allocation and Chirped FBG (ID-77) Fahd CHAOUI IoT-based Adaptive Traffic Signal Controller to Optimize the Flow of Traffic and Reduce Congestion (ID-89) Muhammad Nadeem, Kendah AlMulla, Shathar Ashkanani, Fatimah Hassan, Hawraa AlMesbahi, Manar Alazmi Enhancing Disaster Enhancing Disaster Management by leveraging Smart Cities Technologiesr Management by leveraging Smart Cities Technologies (ID-99) Hossam Elshoukry

S2-4	Cyber Security for Smart Cities Data Analytics for Smart Cities Digital Transformation Digital Inclusion PROCESS MINING Artificial Intelligence Computational Thinking
	<u>Chairs:</u> - Abdellatif EL AFIA - Abdelaaziz El Hibaoui
May 4 11 :30 - 13 :00 (Room 1)	The Scientific Frontier of Digital Transformation: Advancing Urban Landscapes and Citizen Experiences through Technological Integration (ID-108) SAFAA ZAITOUNI, M'HAMED HAMICHE Assessment Transformation in the Age of AI: Moving Beyond the Influence of Generative Tools (ID-109) Wael Farag, Muhammad Nadeem, Magdy Helal An Improved Hybrid Sampling Method for Classifying imbalanced Data to Predict Student Performance (ID-111) MOHAMED BELLAJ, Ahmed Bendahmane A systematic review of smart campus technologies to improve students' educational experiences. (ID-112) MOHAMED BELLAJ, Ahmed Bendahmane

S3-4	Innovation in Infrastructure Intelligent Transportation Systems and Smart Mobility Smart Services Smart Building and Demotic Automation Urban Logistics Innovations and Smart Manufacturing Vehicular ad-hoc networks and wireless connectivity
	<u>Chairs:</u> - Mohamed Chrayah - Bashir Saleh
May 4 11 :30 - 13 :00 (Room 2)	Smart irrigation integrate to IOT technology based on deep learning's algorithm LSTM (ID-100) MOHAMED AMINE MEDDAOUI, MOHAMMED ERRITALI Fuzzy Takagi-Sugeno Simulated Annealing for simple assembly line balancing problem (ID-114) Hibatallah MELIANI, SAID OHAMOUDDOU, Mohamed hamza boulaich, Hanaa El Afia, Abdellatif El Afia

	<p>Towards Smart and Inclusive Cities: MOBILAINÉS Project - Innovating Age-Friendly Mobility Solutions for Older Adults (ID-118) sahar tahir, Bessam Abdulrazak, Dany Baillargeon, Sara Bahrapoor Givi, Catherine Girard, H��l��ne Pigot, V��ronique Provencher</p> <p>Revolutionizing Customer Experiences: AI-Driven Chatbots in the Fourth Industrial Era (ID-137) chaimae waladi, Mohammed Lamarti Sefian, mohamed khaldi</p> <p>Synergistic Interplay in Smart Cities: Mobility, Governance, and Environment - A Review (ID-128) Asmae Dribi, Mohamed essaaidi, Ghezlane Halhoul Merabet</p> <p>Intelligent Water Faucets for Real-Time Water Conservation in Smart Cities (ID-130) SAID OHAMOUDDOU, Mohamed hamza boulaich, Hibatallah MELIANI, Mohammed Ali Ennasar, Abdellatif El Afia</p>
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<p>S4-3</p>	<p>Integrated circuits and Embedded Technologies Internet of Things networking and communication Smart Electrical / Electronic devices, Microelectronic design</p>
	<p><u>Chairs:</u> - Fouad AYTOUNA - Otman EL Mrabet</p>
<p>May 4 11 :30 - 13 :00 (Room 3)</p>	<p>Reconfigurable Coupler (ID-117) Mohamed Guermal, Zbitou Jamal, Mostafa Hefnawi, Fouad AYTOUNA, samira khoulji</p> <p>Advancements in Airport Security Technologies: A Patent Analysis (ID-122) mahmoud eleimat, Omar ALHARASEES, Arnold OSZI</p> <p>Study and design of a 64-element millimeter radar antenna for automotive applications (ID-123) Mohamed lemine EL haiddad, Zbitou Jamal, Mostafa Hefnawi, Salaheddine aourik</p> <p>A Method for Anomaly Detection of Unmanned Aerial Vehicles (UAVs) (ID-124) Muhammed YAVUZ, Mehmet Kaya</p>

S2-5	Cyber Security for Smart Cities Data Analytics for Smart Cities Digital Transformation Digital Inclusion PROCESS MINING Artificial Intelligence Computational Thinking
	<u>Chairs:</u> - Ikram BEN ABDEL OUAHAB - Youssef ZAZ
May 4 14 :30 – 16 :30 (Room 1)	Better Performance in Mathematics, Using Learning Styles While Learning Computational Thinking? (ID-119) Hasnaa Chaabi, Abdellah Azmani, Juan Manuel Dodero Voice Biometric Technology: Enhancing Public Safety and Security in Smart Cities (ID-140) Ikram BEN ABDEL OUAHAB, Lotfi ELAACHAK, Mohammed Bouhorma, Yasser ALLUHAIIDAN, Bassam Zafar Mathematical Modeling of Monetary Poverty by K-Near- est Neighbors Algorithm (ID-126) EL AACHAB YASSINE

S4-4	Integrated circuits and Embedded Technologies Internet of Things networking and communication Smart Electrical / Electronic devices, Microelectronic design
	<u>Chairs:</u> - Fouad AYTOUNA - Otman EL Mrabet
May 4 14 :30 – 16 :30 (Room 2)	Recommender Systems with Graph Neural Networks: A Comparative Study (ID-125) charaf hamidi, Mehdi Gaou, Salma Gaou, Hicham TRIBAK Streetlight Inventory and Illuminance Mapping with Low-Cost IoT and Cloud-based GIS Integration for Enhanced Energy Efficiency (ID-133) Badr BEN HICHOU, Malika Mouhti, Abdelmajid Jamil Unveiling the Influence of AI-Social Fusion: Enhancing Consumer Community Engagement and Advertising Dynamics (ID-135) Fatima Ezzahra Yassine, Imane El Kortbi, Houssame Nekhass, Kaoutar El Aida, Mohamed Amine Lahiala, Hamid Housni

	<p>Cloud and AI Fusion: Revolutionizing Electronic Evidence Admissibility in the Digital Age (ID-60) kanika pandit, Renu Mahajan</p> <p>RIS-aided Downlink NOMA VLC-Based IoT Devices (ID-103) Mohamed El Jbari</p>
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S5-1	<p>Sensing and Smart Products for Energy Smart Energy Smart Grids</p>
	<p><u>Chairs:</u> - Abdelaziz El Hibaoui - Youssef ZAZ</p>
<p>May 4 14 :30 – 16 :30 (Room 3)</p>	<p>Fine-Tuning PI Controller Parameters for an Efficient Wind Energy Extraction System through Mean Squared Error (MSE): A Control System based on Ant Colony Optimization for MPPT (ID-11) NAJOUA MRABET</p> <p>Enhanced Cascade Schemes for Advancing Machine Learning-Based Prediction of Heating and Cooling Loads in Residential Buildings (ID-17) Ivan Izonin, Roman Tkachenko, Ostap Shcherbii, Roman Muzyka, Asaad Faramarzi, Stergios Aristoteles Mitoulis</p> <p>Environmentally compatible and highly improved hole transport materials (HTMs) for perovskite solar cells (ID-86) Mohamed Adadi</p> <p>Improved efficiency of MAPbI3 perovskite solar cells through a numerical study utilizing TiO2/ZnO as bilayer ETLs (ID-143) Mustapha SAHAL, Naveen Kumar, Abdelhadi Kotri, Youssef Belkassmi, Essaadia Oublal, khadija BOUGHANBOUR</p> <p>Experimental study of the improvement of the electrical efficiency of a photovoltaic panel using a phase change material (ID-144) Mohamed BOUZELMAD, Youssef Belkassmi, Abdelhadi Kotri, Mohammed Gounzari, Rachid Oualaid</p> <p>Linear Programming for Real-Time Renewable Energy Operation in Low Energy Buildings (ID-131) Hamza El Hafdaoui, Ahmed Khallaayoun</p> <p>Enhancing Photovoltaic System Electrical Efficiency through Integration of Thermoelectric Generators: A Numerical Investigation (ID-136)</p>

FATIMA AMALLAL, Youssef Belkassmi, Abdelhadi Kotri, Mustapha SAHAL

Intelligent Energy Harvesting and Magnet Induction for Mobile Phone Charging (ID-147)

ABDELLAH MRIJ, Tarik Saidi, Abdelmajid El Bakkali, Lahoucine atourki, Jaouad FOSHI