



SMARTTECH-24 3rd Edition

Marrakech 21-23, Nov. 2024

ROOM1: Thesis room

<https://zoom.us/j/95779041897pwd=ThKxzVqeE3ZEbi987G9vxGTmbH0UZ2.1>

ROOM2: Seminar Room 50

<https://zoom.us/j/92657426286?pwd=eG0myEtEjzOUN2kbbSSdGUbEH3YMDp.1>

22 November 2024 – Day 1

ROOM1

8:30 – 9:15: Reception and Inauguration

9:15 – 10:00: 1st Keynote Speech – **Dr. Mohamed Abid**

Mars 2020 Deputy Chief Mechanical Engineer, Mars 2020 Cruise Entry Descent & Landing (CEDL) MSE, Mars Sample Return SRL Payload Chief Engineer **JPL / NASA**

Title of the Talk: *Mars Missions: Past, Present, and Future. From fiction to Reality*

10:00 – 10:45: 2nd Keynote Speech: **Prof. Anis Koubaa**

Prof. of CS at Prince Sultan University, Riyadh, Saudi Arabia

Title of the talk: *The Frontier of Intelligence: How Generative AI and LLMs Are Reshaping the Business Transformation*

Animated by: Pr. O. BANOUAR

10:45 – 11:15: Coffee Break

11:15 - 12:30 : Session AIH: Artificial Intelligence in Healthcare (5 papers) ROOM1

Chair: Pr. S. ELHADAJ

1. **Paper 2784**

- **Title:** Improving Breast Cancer Detection in BUS Images Using Multimodal Deep Learning and Grad-CAM Fusion



- **Authors:** Zeeshan Mubeen, Zulfiqar Ali, Rahmat Ullah and Muhammad Haroon Ahmad
- 2. **Paper 5063**
 - **Title:** A Fusion Framework of Transformer and CNN for Non-Small Cell Lung Cancer Classification
 - **Authors:** Samia Nawaz Yousafzai, Inzamam Mashood Nasir, Sara Tehsin, Muhammad Attique Khan, Jawad Ahmad and Wadii Boulila
- 3. **Paper 5306**
 - **Title:** A Spatio-Temporal OSM Knowledge Graph for Accident Prediction Based on GCN-GRU Model
 - **Authors:** Mohamed Amine Ben Rhaiem, Mouna Selmi and Imed Riadh Farah
- 4. **Paper 4502**
 - **Title:** Ethical Implications of AI in Healthcare
 - **Authors:** Yousif Al-Saleem, Fahad Al-Medyan, Osama Al-Obaid and Yasir Javed
- 5. **Paper 457**
 - **Title:** Advancing Human Activity Recognition using Ensemble Deep CNN-GRU Network
 - **Authors:** Muhammad Hassan Khan, Nazish Ashfaq, Aleena Asif and Dr. Muhammad Shahid Farid

11:15 – 12:30 : Session AALP : Advances in Arabic Language Processing (5 papers) ROOM2

Chair: Pr. S. RAGHAY

- 1. **Paper 763**
 - **Title:** Arabic Image Captioning Using Transformer-Based Encoder-Decoder Model
 - **Authors:** Yasser Alhabashi, Lahouari Ghouti and Anis Koubaa
- 2. **Paper 1252**
 - **Title:** Enhanced Arabic Retrieval Augmented Generation Using Nested Embedding Models
 - **Authors:** Omer Nacar, Serry Sibae and Anis Koubaa



3. **Paper 8845**

- **Title:** Enhancing Arabic Text to Gloss Machine Translation by Data Augmentation
- **Authors:** Doaa Alghamdi, Mansour Alsulaiman, Yousef Alohal, Mohamed A. Bencherif and Mohammed Algabri

4. **Paper 9310**

- **Title:** Enhanced Arabic Spelling Correction with Sequential Transformer Models.
- **Authors:** Samar Ahmed, Nour Qandos, Serry Sibae and Omar Nacar

5. **Paper 1597**

- **Title:** ArPA: A Novel Speech Analysis and Correction Tool for Arabic-Speaking Children
- **Authors:** Lamia Berriche, Maha Driss, Areej Almontashri, Asma Lghabi, Heba Almudhi and Munerah Almansour

12:30 – 13:30: Session IoT1 : Internet of Things - (4 papers) ROOM1

Chair: Pr. W. BOULILA

1. **Paper 1612**

- **Title:** Modeling of Air Pollution Dispersion Coupled with Video Intelligence Systems for Smart Cities
- **Authors:** Pedro Gea, Antonio Segura, Samuel Pineiro, David Cartelle and Javier Carrillo

2. **Paper 3077**

- **Title:** IoT-Enabled Scheduling Optimization: Revolutionizing Manufacturing Efficiency in Green Reconfigurable Systems
- **Authors:** Atef Gharbi and Maha Driss

3. **Paper 1691**

- **Title:** Design and Implementation of a Connected Stabilometric Platform to Assess Human Balance and Static Postural Stability
- **Authors:** Faten Ben Aicha, Siwar Bellalah and Med Ali Fatmi



4. **Paper 2579**

- **Title:** Enhancing IoT Security through Self-Supervised Graph Neural Networks
- **Authors:** Safa Ben Atitallah, Maha Driss, Wadii Boulila and Anis Koubaa

12-30 - 13:30 : Session AI2: Artificial Intelligence Applications (4 papers) ROOM2

Chair : Pr. A. CHADI

1. **Paper 4637**

- **Title:** Fine-Tuning a Large Language Model for Dialogue Summarization
- **Authors:** Omnia Aljuhani and Lena Alahmadi

2. **Paper 4961**

- **Title:** Sentiment Urgency Emotion Detection for SAP Business Intelligence
- **Authors:** Dr. Tariq Soussan and Professor Marcello Trovati

3. **Paper 5627**

- **Title:** Comparative Analysis of Deep Learning Algorithms for Forecasting PV Production and Energy Consumption
- **Authors:** Kaoutar Aitchaoui, Hassan El Fadil, Oumaima Choukai and Oumaima Ait Omar

4. **Paper 5933**

- **Title:** Influence of KNN on Genetic Algorithm to Attain Better Routing in TSP Problem
- **Authors:** Hala Khankhour, Najat Rafalia and Jaafar Abouchabaka

13:30 – 14:30 : Session NETUM: Networks and Unmanned Systems (4 papers) ROOM1

Chair: Pr. A. MNAOUER

1. **Paper 4924**

- **Title:** Non-Visual Terrain Navigation for UAVs: A Comparative Study in GPS-Denied Environments
- **Authors:** Imen Jarraya, Mohamed Abdelkader, Khaled Gabr and Anis Koubaa



2. **Paper 6542**

- **Title:** Unmanned Aerial Systems Architecture and Security Concerns: A Cyber-Physical System Perspective
- **Authors:** Fahd Dehbi, Mohamed Zraib and Ahmed Chebak

3. **Paper 9853**

- **Title:** Enhancing Vehicular Ad Hoc Networks (VANETs): Communication Protocols, Applications, Challenges, and Future Directions
- **Authors:** Muhammad Umair Munir, Zahid Khan, Nauman Khan, Anis Koubaa and Ihsan Ali

4. **Paper 7132**

- **Title:** Optimizing Urban Lighting Systems Through Data-Driven Graph Models and Machine Learning.
- **Authors:** Yassine Laarichi, Oualid Rholam, Amal Aloui and Mariem Elkaf

13:30 – 14:15: Session AI2: Artificial Intelligence & Cybersecurity (2 papers) ROOM2

Chair: Pr. A. SBAI

1. **Paper 1183**

- **Title:** FLIGHTGEN: ROS2-Powered Automated UAV Dataset Generator
- **Authors:** Mohamed Abdelkader, Khaled Gabr, Omer Nacar, Imen Jarraya and Anis Koubaa

2. **Paper 9946**

- **Title:** Securing Smart City Networks by Analysing Vulnerabilities in LoRaWAN and Zigbee Networks
- **Authors:** Aminu Bello Usman, Mujeeb Ur Rehman and Wadii Boulila

3. **Paper 6855**

- **Title:** Algorithms for dynamic storage and secure backup in cloud computing
- **Authors:** Mahdi Jemmali, Mohsen Denden, Kais Belwafi and Moath Mheidat

14:30 – 15h30: Lunch Break

Free Time



22 November 2024 – Day 2

ROOM1

09:00 – 09:45: 3rd Keynote Speech: Dr. Antonio J. Jara

Chief Scientific Officer at Libelium.

Title of the Talk: *Smart Systems and Emerging Technologies for Smart Cities: Leveraging Digital Twins for Pollution and Traffic Assessment*

09:45 – 11:00: Session CYS1: Cybersecurity (5 papers) ROOM1

Chair: Pr. S. ATITALLAH

1. Paper 3986

- **Title:** Transfer Learning-based Contagious Diseases Transmission Video Surveillance: A COVID-19 Case Study
- **Authors:** S Muhammad Ahmed Hassan Shah, Asad Ullah, Sana Ullah Jan and Bill Buchanan

2. Paper 4529

- **Title:** Secure Electronic Voting System using Blockchain technology
- **Authors:** Siwar Rekik, Lamia Berriche, Areej Alharbi Alharbi, Jhan Alsakait, Hajer Altuwijri and Kouloud Alqhatani.

3. Paper 9676

- **Title:** An Approach for Android Forensics: TikTok, Instagram and Facebook Use-Cases
- **Authors:** Issraa Ben Mnaouer, Ayman Samsudeen, Salah Eddine Choutri, Gandeve Bayu Satrya and Adel Ben Mnaouer

4. Paper 6190

- **Title:** IEC61131-3 Input Output Hashing Validation
- **Authors:** Eliot Bolster, Aydin Hoday, Nikolaos Pitropakis and Christos Chrysoulas

5. Paper 1413

- **Title:** A Multiplicative Attention-based Deep Learning Framework for Intrusion Detection in IIoT Networks
- **Authors:** Asadullah Momand, Sana Ullah Jan and Naeem Ramzan



09:45 - 11:00: Session EMT: Emerging Technologies (5 papers) ROOM2

Chair: Pr. A. MNAOUER

1. **Paper 293**
 - **Title:** X-Cross: Image Encryption Featuring Novel Dual-Layer Block Permutation and Dynamic Substitution Techniques
 - **Authors:** Hansa Ahsan, Safee Ullah, Jawad Ahmad, Aizaz Ahmad Khattak, Muhammad Ali and Muhammad Shahbaz Khan
2. **Paper 1494**
 - **Title:** An intelligent big data analysis approach for real-time data processing: A case study on META stock price prediction using LSTM model
 - **Authors:** Zineb El Falah, Jaafar Abouchabka and Najat Rafalia
3. **Paper 6088**
 - **Title:** Advanced Control Strategies for Nonlinear Continuous Stirred Tank Reactors Using Emerging Technologies
 - **Authors:** Selma Hussein, Mohammed El-Affendi and Ahmed Abdellatif
4. **Paper 7271**
 - **Title:** Optimizing Software Development Projects: Implementing a Scope Tracker Application to Mitigate Scope Creep
 - **Authors:** Florence Chioma Ogbuagu, Ikram Asghar, Sunnia Amjad and Rahmat Ullah
5. **Paper 4510**
 - **Title:** The Impact of Intellectual Property Rights on Innovation in Emerging Technologies
 - **Authors:** Emna Chikhaoui and Selma Hussein

**11:00 – 11:30: Coffee Break
ROOM1**

11:30 – 12:15: 4th Keynote Speech: Ms Fadoua CHERGAOUI

Engineer, Urban X manager, researcher in Information Systems and digitalization
Title of the Talk: *L'impact de l'Intelligence Artificielle et des villes intelligentes sur l'expérience touristique*



12:15 – 12:30: Paper

- **Title:** L'intelligence artificielle au service du tourisme marocain : vers une transformation durable et compétitive
- **Authors:** Maria Elghezaoui, Youssef Elboubkri, Abir Ouzzine

Animated by: Pr. A. SBAI

13:30 Lunch Break

Free Time

23 November 2024 – Day 3

ROOM1

09:00 - 09:45 : 5th Keynote Speech: Dr. Muhammad Abdul-Mageed

Canada Research Chair in Natural Language Processing and Machine Learning, The University of British Columbia & MBZUAI.

Title of the Talk: *Multimodal Arabic Large Language Models*

Animated by: Pr. S. RAGHAY

09:45 – 10:15: Coffee Break

10:15 – 12:30: Session AI3: Artificial Intelligence (9 papers) ROOM1

Chair : Pr. H. AZNAOUI

1. Paper 2828

- **Title:** Possibilistic distance measure of the heterogenous data Numeric and Nominal
- **Authors:** Wided Ben Marzouka, Basel Solaiman and Mohamed Farah

2. Paper 6868

- **Title:** Integrating Hybrid Deep Learning for Improving Traffic Flow Prediction
- **Authors:** Idriss Moumen, Najat Rafalia and Jaafar Abouchabaka

3. Paper 7114

- **Title:** FAQs System for the University using Generative AI with Large Language Models
- **Authors:** Aisha Ahmad, Waad Alhejali, Soumaya Chaffar and Anis Koubaa



4. **Paper 7460**

- **Title:** Enhancing Speaker Diarization in Forensic Audio: A Comparative Analysis of Machine Learning Algorithms for Gender Classification
- **Authors:** Rahmat Ullah, Ikram Asghar, Gareth Evans, Rab Nawaz, Saeed Akbar and Dorothy Anne Roberts

5. **Paper 8209**

- **Title:** Smart Tech Roulette: Insights for Exploring AI's Impact on Learning, Cognitive Development, and Ethics in Context
- **Authors:** Tahira Hoke

6. **Paper 488**

- **Title:** An Innovative Approach to Privacy Preservation in CP–ABE Through GAN–Enhanced Policies for Resource–Constrained Environments
- **Authors:** Akram Chhaybi, Jihane Jebrane and Saiida Lazaar

7. **Paper 4825**

- **Title:** Enhancing Cloud Security through Anomaly Detection: An Artificial Intelligence Driven Approach to Secure Authentication and Authorization in SAML and OAuth 2.0 Protocols
- **Authors:** Morgan Nwaiku, Muhammad Diyan, Sultan Almakdi, Ikram Asghar and Akinade Olugbenga

8. **Paper 4180**

- **Title:** Optimizing Fire Safety: Reducing False Alarms Using Advanced Machine Learning Techniques
- **Authors:** Muhammad Hassan Jamal, Abdulwahab Alazeb, Shahid Allah Bakhsh, Wadii Boulila, Syed Aziz Shah, Aizaz Ahmad Khattak and Muhammad Shahbaz Khan

9. **Paper 7345**

- **Title:** Bridging Energy Gaps in WSNs: An In–Depth Comparison of Routing Protocols
- **Authors:** Nmari Ferdaouss , Najlae Idrissi , Hanan Aznaoui

12:30 – 13:00: Closing Ceremony ROOM1

13:00: Lunch Break