



Seventh International Conference of the Tunisian Operational Research Society

IC_TORS'25

April 11-13, 2025 - Sousse - TUNISIA



Friday April 11, 2025

09:00		Registration		
10:00	10:30	Welcoming Coffee		
10:30	11:15	Opening Ceremony (Room Carthage)		
11:15	12:00	<p>Keynote Speech 1 (Room Carthage) Pr. Franck Fontanili, IMT Mines Albi, France Digital Twins of Patient Pathways in Hospitals: What Can They Offer Us? Chair: Pr. Omar Ben Ayed</p>		
12:00	14:30	Lunch & Check-in		
14:30	15:15	<p>Keynote Speech 2 (Room Carthage) Pr. Yves De Smet, Université Libre de Bruxelles, Belgium Are There Arguments In Favor Of Using PROMETHEE To Rank Alternatives Evaluated On Multiple Conflicting Criteria? Chair: Pr. Said Gattoufi</p>		
15:15	16:15	Parallel Sessions A		
A		<p>Session A1 (Room Carthage) Machine Learning for MCDA Chairs : Pr. Yves De Smet & Pr. Med Ayman Boujelben</p>	<p>Session A2 (Room Le Laurier) OR Applications 1 Chairs : Pr. Hassini Elkafi & Pr. Younes Boujelben</p>	<p>Session A3 (Room Tunis) Vehicule Routing Problems Chairs : Pr. Houda Derbel & Pr. Zied Jemai</p>
15:15	15:35	Integrating Machine Learning and Multi-Criteria Decision-Making for Strategic Organizational Planning Ahmed Cherif, Sonia Rebai	Profitability of E-Commerce Platforms Private Brands under Agency Selling Salma Karray, Simon Pierre Sigue	Including Extended Cost models and Vehicle Use Restrictions for New Realistic Variants of the Split Delivery Vehicle Routing Problem Marwa Chalgham, Racem Mellouli
15:35	15:55	Integrating Random Forest and Spherical Fuzzy AHP for Enhanced Decision-Making Under Uncertainty Sarra Frigui, Sonia Rebai	Impact of dairy farmers' density on the choice of Refrigerated Tanks in Bizerte region Inès Saidi, Rim Kelai	New Green Mixed-Integer Linear Programming Model for the One-to-one Pickup and Delivery Problem Hanen Aydi, Sameh Chtourou, Adnen EL-Amraoui, Ahmed Frikha, François Delmotte
15:55	16:15	Recent Trends in Multi-Criteria Decision Making Research Islam Hamza, Sonia Rebai	A Homological Criterion for k-Coverage in Wireless Sensor Networks with Controlled Boundaries Habib Ammari, Edward Strong	Optimization of Heterogeneous Capacitated Vehicle Routing Problem for Hazardous Materials Transportation Mariam Abdelwahed, Riadh Harizi, Mohamed Cheikh, Taicir Loukil
16:15	16:45	Coffee Break		

16:45		17:45		Parallel Sessions B			
B		Session B1 (Room Carthage) Machine Learning & Forcasting 1 Chairs : Pr. Luis Martínez López & Pr. Med Naceur Aziez		Session B2 (Room Le Laurier) Theoretical Advances in OR Chairs : Pr. Hedi Nabli & Pr. Abdelaziz Damak		Session B3 (Room Tunis) Optimisation in Planning and Scheduling Chairs : Pr. Taicir Loukil & Pr. Habib Ammari	
16:45	17:05	Two-Stage Deep Reinforcement Learning Approach to Solving the Physician Scheduling Problem Imen Masmoudi, Cahid Ahabchane, Safa Bhar Layeb		Generation of Cutting Patterns Method to Solving a Bi-objective One-dimensional Cutting Stock problem Moncef Abbas		Energy-efficient permutation flowshop scheduling minimizing makespan vs energy consumption Nahla Chabbah Sekma, Wiem Malek	
17:05	17:25	Machine Learning-Based Evapotranspiration Prediction and Irrigation Optimization in Tunisia Fedya Telmoudi, Sonia Rebai, Safa Ben Salem		Biobjective Integer Stochastic Optimization Over The Integer Stochastic Efficient Set Mustapha Moulai		Enhancing Sustainable Hoist Scheduling with a Multi-Objective Lexicographic Approach Amal Sallem, Marie-Ange Manier, Sid Lamrous, Sameh Chtourou, Ahmed Frikha	
17:25	17:45	A Hybrid DEA and Machine Learning Approach for Predicting and Evaluating the Environmental Efficiency of Tunisian Thermal Power Plants Mariem Belgaroui, Jalel Eleuchi, Olfa Kammoun		Adaptive Group Decision Framework: Trust Dynamics in Social Networks Sarra Frigui, Sonia Rebai		Veterinary Visits Synchronization with Medication Delivery by Drones Pushkar Shamik, Hassini Elkafi	
19:00		Dinner					
Saturday April 12, 2025							
09:00	09:45	Keynote Speech 3 (Room Carthage) Pr. Luis Martínez López, University of Jaén, Jaén, Spain Large Scale Group Decision Making: Analysis and Challenges for Consensus Models Chair: Pr. Yves De Smet					
9:45		10:45		Parallel Sessions C			
C		Session C1 (Room Carthage) Machine Learning & Forcasting 2 Chairs : Pr. Said Gattoufi & Pr. Soulef Smaoui		Session C2 (Room Le Laurier) Heuristics and Metaheuristics Chairs : Pr. Omar Ben Ayed & Pr. Moncef Abbas		Session C3 (Room Tunis) Logistics & Transport Management Chairs : Pr. Olfa Kamoun & Pr. Mounir Ben Aissa	
09:45	10:05	Integrating Evapotranspiration Forecasting to Optimize Freshwater and Reclaimed Water Allocation for Sustainable Agriculture Safa Ben Salem, Sonia Rebai, Fedya Telmoudi		A comparative review of soccer-inspired metaheuristics for optimization problems Roua Ben Ammar, Anis Gharbi, Mohamed Naceur Azaiez		Optimizing Logistics for International Trade: Insights from Tunisian Case Studies in a Globalized Economy Kaies Samet, Tarak Barhoumi, Ahmed Derbel	
10:05	10:25	Machine Learning for Algorithmic Trading: Pattern Recognition, Forecasting, and Risk Management Ebtihel Kantaoui, Marwa Hasni, Safa Bhar Layeb		Enhanced Soccer Match Algorithm for Solving Real-World Engineering Problems Roua Ben Ammar, Anis Gharbi, Mohamed Naceur Azaiez		A bayesian network model for analyzing CO2 emissions in Tunisia's transportation sector Wissem Ennouri	
10:25	10:45	Comparison of Photovoltaic and Wind Systems Based on ML Predictions of Solar Irradiance and Wind Speed Amel Chebbi, Wissem Zghal, Mounir Ben Aissa		Estimation of Distribution Algorithms for Optimization Over the Efficient Set of the Multiobjective E-commerce Program Lamine Idir, Ali Zaidi, Mourad Azi		Urban Logistics - Rationalization of Adaptive Policies for a More Sustainable City Khadija Werghi, Tarek Barhoumi, Karim Kammoun	
10:45	11:15	Coffee Break					

11:15	12:35	Parallel Sessions D		
D		Session D1 (Room Carthage) OR in Healthcare Chairs : Pr. Franck Fontanili & Pr. Safa Bhar Layeb	Session D2 (Room Le Laurier) OR Applications 2 Chairs : Pr. Mustapha Moulai & Pr. Hedi Nabli	Session D3 (Room Tunis) Logistics & Supply Chain Management Chairs : Pr. Sonia Rebai & Pr. Med Naceur Aziez
11:15	11:35	Developing a Discrete Event Simulation Model for Maternity Service Sayda Ben Sghaier, Rafea Mraih	Evaluating Environmental and Atmospheric Influences on Tunisian PV Performance: A MCDA FDelphi-FAHP Chedli Damak, Mohamed Ali Elleuch, Ahmed Frikha, Boukthir Haddar	AI-Powered Optimization of Operator Assignments in Sustainable Warehousing Eya Ben Amor, Hajer Triki, Mounir Ben Aissa
11:35	11:55	Optimizing Emergency Department Patient Flow: A Comparative Study of Expert Systems and XGBoost in Simulation-Based Modeling Afef Ben Brahim, Hichem Kammoun	A Comprehensive Framework for Achieving Low-Carbon Supply Chain Management Taycir Ben Abid, Yathreb Ezzaalouni, Heni Zribi	Logistics Performance and Sustainability: Modeling Interactions in MENA Countries Using the CS-ARDL Approach Firas Ben Romdhane, Khaled Ben Abdallah
11:55	12:15	Handling Missing Data in DEA using Multiple Linear Regression Imputation method Nour Mestouri, Ines Kanoun, Med Ayman Boujelben, Habib Chabchoub	DSK-IHT: Achieving Deterministic and Stochastic Connected k-Coverage in Planar Wireless Sensor Networks Using Irregular Hexagonal Tessellation Habib Ammari, Dakshanya Maddala	Integration of Artificial Intelligence in a Multimanned Assembly Line Balancing Problem Zainab Tkitek, Hajer Triki, Hela Moalla Frikha
12:15	12:35	Integrating Health 4.0 Technologies for Improved Patient Flow: A Hierarchical Best-Worst Method Approach Oumaima Fersi, Jihen Jelassi, Ahmed Frikha	Integrating Cradle to Cradle (C2C) in Circular Business Model Innovation: A Case Study Anwar Jlalila, Mohamed Amir Keskes, Diala Dhouib	
12:15	14:30	Lunch		
14:30	15:15	Keynote Speech 4 (Room Carthage) Pr. Said Gattoufi, University of Tunis, Tunisia Intelligent Data Enabled Analytics (IDEA) A new paradigm for research in Management Science Chair: Pr. Franck Fontanili		
15:15	16:35	Parallel Sessions E		
E		Session E1 (Room Carthage) Multicriteria Decision Aid 1 Chairs : Pr. Luis Martínez López & Pr. Diala Dhouib	Online Session E2 (Room Le Laurier) Optimisation in Planning and Decision Making Chairs : Pr. Safa Bhar Layeb & Pr. Houda Derbel	Session E3 (Room Tunis) PhD Workshop 1 Chairs : Pr. Taicir Loukil & Pr. Jalel Euch
15:15	15:35	A Data-Driven Approach to Headphone Brand Evaluation: Integrating Text Mining, Sentiment Analysis, and TOPSIS Cyrine Ben Othmen, Sonia Rebai	Emergency Physician Scheduling: A Decision Support Approach Lydia Rabiaa, Chaabane Djamel	A linear structural equation model for telework barriers and their impact on industry 5.0 Sirine Bouaziz, Dorra Kallel, Noura Beji, Diala Dhouib
15:35	15:55	A Multi-Criteria Group-Decision-Making Approach For Risk assesment In The Pharmaceutical Supply Chain Under Uncertainty Wiem Daoud Benamor, Hela Moalla Frikha	Effective Models For Hajj Scheduling And Transportation Problems Mahmoud Zennaki, Ali Kies	Optimized Bi-Objective Genetic Algorithm with Machine Learning Integration for Solving the Capacitated Examination Timetabling Problem Syrine Sedki, Abdelkarim Elloumi, Nacim Yanes
15:55	16:15	MCDM Model for Sustainable Hybrid Renewable Energy System Design under Uncertain Environment Zainab Koubaa, Adnen El Amroui, Ahmed Frikha, François Delmotte	Enhancing AHP Consistency through Game Theory: An Approach Using Shapley Values for Marginal Adjustment Mohamed Aziz Srairi, Sonia Rebai	Vehicle routing optimization with time windows for the home health care Ahlem Fkiri, Mohamed Salim Amri Sakhri, Neila Rjaibi
16:15	16:35	A Novel Two-Stage C-H-SWARA Method for MCDM: Application in Photovoltaic Panel Selection Mejda Bouzid, Mohamed Ali Elleuch, Ahmed Frikha	Solving production planning problem using multi-objective programming Zainab Alwaeli	Identification and Evaluation of Barriers to the Adoption of Industry 4.0 Technologies Samah Amamou, Noura Béji, Ahmed Frikha
16:35	19:00	Networking & discussion time		
19:00		Dinner		

Sunday April 13, 2025																										
09:00	09:45	<p align="center">Keynote Speech 5 (Online; Room Carthage) Pr. Dmitry Ivanov, University of HWR-Berlin, Germany Integration of Operations Research With AI: Digital Supply Chain Twins Chair: Pr. Mohamed Naceur Aziez</p>																								
9:45	11:05	Parallel Sessions F																								
F		<table border="1"> <thead> <tr> <th align="center">Session F1 (Room Carthage) Multicriteria Decision Aid 2 Chairs : Pr. Ahmed Frikha & Pr. Med Ayman Boujelben</th> <th align="center">Online Session F2 (Room Le Laurier) Advanced Models in Optimisation & Sustainability Chairs : Pr. Sonia Rebai & Pr. Soulef Smaoui</th> <th align="center">Session F3 (Room Tunis) PhD Workshop 2 Chairs : Pr. Hichem Kamoun & Pr. Diala Dhouib</th> </tr> </thead> <tbody> <tr> <td>09:45</td> <td>10:05</td> <td> <p>A Trust-Guided Consensus Optimization Model for MCDM in Large-Scale Networks Sarra Frigui, Sonia Rebai</p> </td> </tr> <tr> <td>10:05</td> <td>10:25</td> <td> <p>Multi-Criteria Decision Support for Fault Management in Smart Manufacturing Systems using Fuzzy QFD and Fuzzy TOPSIS Methodology Mouna Regaieg Cherif , Hela Moalla Frikha</p> </td> </tr> <tr> <td>10:25</td> <td>10:45</td> <td> <p>RASS-RATSI Sort B: A RASS-RATSI- based method for sorting problems Emna Zouaghi, Abir Ouhibi, Hela Moalla Frikha</p> </td> </tr> <tr> <td>10:45</td> <td>11:05</td> <td> <p>Improved TOPSIS-Based Multi-Criteria Decision Analysis for Sustainable Transport Equipment Deployment Yasmine Bouaziz Abdelkefi, Sonda Elloumi, Diala Dhouib</p> </td> </tr> <tr> <td>11:10</td> <td>11:30</td> <td align="center">Closing Cermony & Awards</td> </tr> <tr> <td>11:30</td> <td>12:00</td> <td align="center">Closing Reception & Buffet</td> </tr> <tr> <td>12:00</td> <td></td> <td align="center">Check Out</td> </tr> </tbody> </table>	Session F1 (Room Carthage) Multicriteria Decision Aid 2 Chairs : Pr. Ahmed Frikha & Pr. Med Ayman Boujelben	Online Session F2 (Room Le Laurier) Advanced Models in Optimisation & Sustainability Chairs : Pr. Sonia Rebai & Pr. Soulef Smaoui	Session F3 (Room Tunis) PhD Workshop 2 Chairs : Pr. Hichem Kamoun & Pr. Diala Dhouib	09:45	10:05	<p>A Trust-Guided Consensus Optimization Model for MCDM in Large-Scale Networks Sarra Frigui, Sonia Rebai</p>	10:05	10:25	<p>Multi-Criteria Decision Support for Fault Management in Smart Manufacturing Systems using Fuzzy QFD and Fuzzy TOPSIS Methodology Mouna Regaieg Cherif , Hela Moalla Frikha</p>	10:25	10:45	<p>RASS-RATSI Sort B: A RASS-RATSI- based method for sorting problems Emna Zouaghi, Abir Ouhibi, Hela Moalla Frikha</p>	10:45	11:05	<p>Improved TOPSIS-Based Multi-Criteria Decision Analysis for Sustainable Transport Equipment Deployment Yasmine Bouaziz Abdelkefi, Sonda Elloumi, Diala Dhouib</p>	11:10	11:30	Closing Cermony & Awards	11:30	12:00	Closing Reception & Buffet	12:00		Check Out
Session F1 (Room Carthage) Multicriteria Decision Aid 2 Chairs : Pr. Ahmed Frikha & Pr. Med Ayman Boujelben	Online Session F2 (Room Le Laurier) Advanced Models in Optimisation & Sustainability Chairs : Pr. Sonia Rebai & Pr. Soulef Smaoui	Session F3 (Room Tunis) PhD Workshop 2 Chairs : Pr. Hichem Kamoun & Pr. Diala Dhouib																								
09:45	10:05	<p>A Trust-Guided Consensus Optimization Model for MCDM in Large-Scale Networks Sarra Frigui, Sonia Rebai</p>																								
10:05	10:25	<p>Multi-Criteria Decision Support for Fault Management in Smart Manufacturing Systems using Fuzzy QFD and Fuzzy TOPSIS Methodology Mouna Regaieg Cherif , Hela Moalla Frikha</p>																								
10:25	10:45	<p>RASS-RATSI Sort B: A RASS-RATSI- based method for sorting problems Emna Zouaghi, Abir Ouhibi, Hela Moalla Frikha</p>																								
10:45	11:05	<p>Improved TOPSIS-Based Multi-Criteria Decision Analysis for Sustainable Transport Equipment Deployment Yasmine Bouaziz Abdelkefi, Sonda Elloumi, Diala Dhouib</p>																								
11:10	11:30	Closing Cermony & Awards																								
11:30	12:00	Closing Reception & Buffet																								
12:00		Check Out																								
09:45	10:05	<p>Advancing Decision-Making with IVIF EDMAV Method Sirine Boujelben, Hela Moalla Frikha</p>																								
10:05	10:25	<p>Optimizing Cross-Docking Operations in Battery-Swappable Truck Fleets: A Mathematical Approach Amna Altaf, Adnen El Amrroui, François Delmotte, Christophe Lecoutre</p>																								
10:25	10:45	<p>A Variable Neighborhood Research Algorithm for Integrated Production-Inventory Routing Problem with Proportional Emission Carbon Considerations Amel Ketata, Houda Derbel</p>																								
10:45	11:05	<p>A multi-criteria analysis to assess key factors affecting olive oil quality in the Sfax region Fedy Boujelben, Noura Béji, Ahmed Frikha</p>																								
		<p>Prioritizing Intelligent Transportation Systems for Road Safety in Tunisia: A Hybrid MCDM Approach Mohamed Yessine Naifar, Ahmed Frikha</p>																								
		<p>Analyzing the Impact of E-Commerce on Apparel Supply Chain: A Multi-Criteria Approach Firass Mbarki, Noura Béji, Dorra Kallel</p>																								
		<p>Development of a Multi-Capital Sustainability Dashboard for the Agro-Food Supply Chain in Tunisia Sabrine Chtioui, Alaeddine Zouari, Fatma Lehyani</p>																								