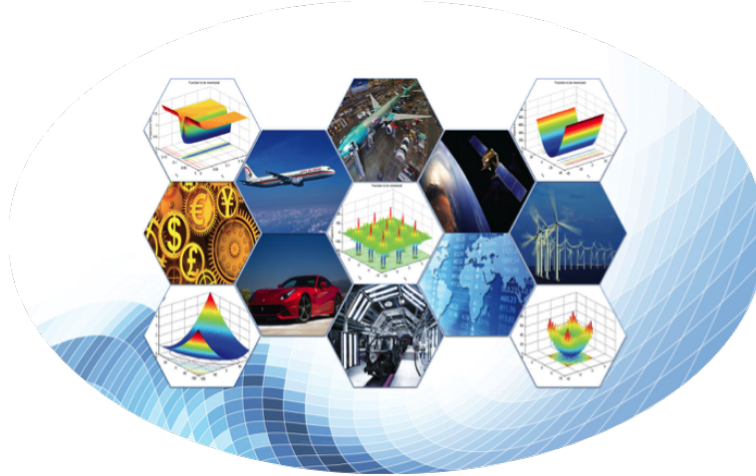


OSTFALIA UNIVERSITY OF APPLIED SCIENCES and SULTAN MOULAY SLIMANE UNIVERSITY

The 7th EDITION of the INTERNATIONAL CONFERENCE on OPTIMIZATION and APPLICATIONS

ICOA'2021



The 7th Edition of the International Conference on Optimization and Applications (ICOA'2021) provides a high-level international forum and an excellent venue for scientists, researchers, academic faculties, students, industry leaders, and others in the fields of optimization to present, discuss and publish their recent research results and approaches.

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CONFERENCE CHAIRS:

Prof. Dr. HACHIMI Hanaa

Prof. Dr. Ing. JENSEN Nils



TECHNICAL PROGRAM

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Welcome Message from the Conference Chairs

Welcome to the 7th IEEE International Conference on Optimization and Applications (ICOA2021), which is held at OSTFALIA University of Applied Sciences, Wolfenbüttel, Germany on May 19 – 20, 2021,. The conference is organized by OSTFALIA University of Applied Sciences, Wolfenbüttel, Germany and Sultan Moulay Slimane University, Beni Mellal, Morocco. The ICOA2021 is Technically Supported by the International IEEE Advancing Technology of Humanity. ICOA2021 is a forum for depicting excellent results and new challenges on the optimization and its theoretical and applicative aspects. It brings together industrial and academic experts who are proficient in various engineering, design and research fields. This conference will provide an exceptional opportunity for the academic and industrial communities to address new challenges, share solutions and discuss future research guidance in this thematic. ICOA2021 received submissions from many countries. Many people have collaborated and worked hard to produce a successful ICOA2021 conference. Thus, we would like to thank all the authors for their interest to this conference, the scientific committee members, who carried out the most difficult work by carefully evaluating the submitted papers. Thanks to Publicity, Organizing and all Committees members for their assistance in making this conference a success. Our special thanks to our distinguished Keynote Speakers who have agreed to address the conference attendees. We are also grateful to all our partners and sponsors for their help and support of our conference. Welcome to Wolfenbüttel, Germany and we hope that you will enjoy the conference program.

Conference Chairs

Prof. Dr. Hanaa HACHIMI: hanaa.hachimi@usms.ma

Prof. Dr. Ing. Nils JENSEN : n.jensen@ostfalia.de

Sponsors and Partners



Many Thanks!
 The involvement and sponsorship of our sponsors plays a major role in the success of our event.
 The ICOA'2021 sincerely thanks all the structures who have contributed to the success of this conference.

Press



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LIST OF TOPICS

The ICOA2021 Conference Seeks Original and High Quality Papers

Tools and Methods

Artificial Intelligence
 Learning Algorithms
 Combinatorial Optimization and Mathematical Programming
 Numerical Methods
 Linear and Non-linear Programming
 Multiobjective Programming
 Parallel and Distributed Computation
 Bio-inspired Computations and Neural Networks
 Fuzzy systems
 Evolutionary Computing
 Metaheuristic Optimization Algorithms
 Hybrid Algorithms
 Dynamic Optimization
 Continuous Optimization

Fields and Areas

Electric, Electronic engineering
 Embedded Systems
 Telecommunication Engineering
 Robotic
 Control and Mechatronics
 Physics
 Civil Engineering
 Smart Grids and energy systems
 Smart city and traffic simulation
 Aerospace, Naval and Marine Engineering
 Transportation, Logistic Engineering
 Software and Computer Engineering
 Big data
 Scheduling and Data mining
 Bio mathematics
 Automotive mechatronics
 Aviation

All accepted and presented papers will be published in IEEE Xplore Digital Library and indexed in Scopus.

Technical Program Overview

Wednesday 19th

9h00 - 09h30	Opening Ceremony
09h30 - 10h00	Keynote 1
10h00 - 12h00	WM1 WM2 WM3 WM4
14h00 - 14h30	Keynote 2
14h30 - 16h30	WA1 WA2 WA3 WA4

Thursday 20th

09h30 - 10h00	Keynote 3
10h00 - 10h30	Keynote 4
10h30 - 12h00	TM1 TM2 TM3 TM4
12h00 - 12h30	Keynote 5
13h00	Closing Ceremony

WM/A: Wednesday Morning/Afternoon

TM/A: Thursday Morning/Afternoon

Session	Topics	
WM	WM1	embeded system / Renewable energy/management
	WM2	Computer Sciences
	WM3	Operational research / Machine learning
	WM4	Telecommunication
WA	WA1	Mathematics
	WA2	Physics/IT
	WA3	Smart cities/ Environment
TM	TM1	Big data / Computer Sciences
	TM2	Control / IoT
	TM3	Mathematics

Keynote Speakers



Wednesday 19th
09h30 - 10h00

KN 1: Prof. Dr. Ing. Andrei VICTOR SANDU
Gheorghe Asachi Technical University of IASI, Romania

In depth characterization of Materials

Session Chair: Prof. Dr. Hanaa HACHIMI



Wednesday 19th
14h00 - 14h30

KN 2: Prof. Dr. Oscar CASTILLO
Tijuana Institute Technology, Mexico

Nature-Inspired Optimization of Type-2 Fuzzy Controllers

Session Chair: Prof. Dr. Ing. JENSEN NILS



Thursday 20th
9h30 - 10h00

KN 3: Prof. Dr. Mohd Helmy Abd Wahab
UTHM University, Malaysia

Innovation in AI in the era of Industrial Revolution 4.0

Session Chair : Prof. Dr. Ina SCHIERING



Thursday 20th
10h00 - 10h30

KN 4: Prof. Dr. Zhour MADINI
Ibn Tofail University, Morocco

Radiofrequency components for IOT wireless communication - System-level analysis : Modeling and Optimization

Session Chair : Prof. Dr. Adnane ADDAIM



Thursday 20th
12h00 - 12h30

KN 5: Professor PhD. Amlan CHAKRABARTI
Director A.K. Choudhury School of I.T., University of Calcutta, India

Abstracting Latent Space through Deep Learning

Session Chair : Prof. Dr. Aziz DEROUICHI

RIP to your soul dear Professor



The keynote speaker
Prof. Dr. G. SUSEENDRAN
VISTAS, India

Dr.G.Suseendran received his M.Sc., Information Technology and M.Phil., degree from Annamalai University, Tamil Nadu, India and Ph.D., degree in Information Technology-Mathematics from Presidency College, University of Madras, Tamil Nadu, India. In additional qualification, he has obtained DOEACC 'O' Level AICTE Ministry of Information Technology and Honor Diploma in Computer Programming. He is currently working as Assistant Professor, Department of Information Technology, School of Computing Sciences, Vels Institute of Science, Technology Advanced Studies (VISTAS), Chennai, Tamil Nadu, India which is well known University. He has 10 years of teaching experience in both UG and PG Level. His research interests include Wireless Sensor Network, Ad-hoc networks, IOT, Data Mining, Cloud Computing, Image Processing, Knowledge-based systems and Web Information Exploration.

He has produced 4 M.Phil., Scholars and 3 Ph.D., Research Scholars awarded under my Guidance and Supervision.

He has published more than 72 research papers including 3 SCI publication in various International Journal such in Science Citation Index, IEEE Access, Springer Book Chapter, Scopus, and UGC referred journals. He has presented 20 papers in various international Conferences. He authored 11 Book and received 6 awards.

Dr.G.Suseendran
www.suseendar.com

Sessions Content

WM1: Embedded system / Renewable energy/ Management Wednesday , May 19-2021 (10h00 to 11h30)		
Session Chairs: Prof. Dr. L. DEMRAOUI / Prof. Dr. M. KAICER / Prof. Dr. S. BELHOUIDEG		
10h00	Malak Dargham and Hanaa Hachimi	Artificial Intelligence: Between contribution to the emergence of social innovation and the destabilization of social practices Case of the Group “Crédit Agricole” in Morocco
10h15	Michiel Haemers, Clara-Mihaela Ionescu, Bruno Depraetere, Kurt Stockman and Stijn Deramme-laere	Hardware and control co-design enabled by a state-space formulation of cascaded, interconnected PID controlled systems
10h30	Yu-Liang Lin and Ming-Jong Yao	The Joint Replenishment Problem under Cycle Time Constraints
10h45	Youssef Moumani, Abdeslam Jabal Laafou and Abdessalam Ait Madi	Modeling and Backstepping Control of DFIG used in Wind Energy Conversion System
11h00	Aicha Lamjahdi, Hafida Bouloiz and Maryam Gallab	Overall performance indicators for sustainability assessment and management in mining industry
11h15	Hajar Doubabi, Yassir Oublaid, Issam Salhi, Mohammed Chennani and Najib Essoubouli	A Reliable Power Management Strategy of a PV-Based Electric Scooters Charging Station

WM2: Computer Sciences / Renewable energy Wednesday , May 19-2021 (10h00 to 11h30)		
Session Chairs : Prof. Dr. B. BOUKLATA / Prof. Dr. H. HACHIMI / Prof. Dr. I. EL BAZI		
10h00	Eric Carlos Dallmeier	Computer Vision based Web Scraping for Internet Forums
10h15	Hassan Facoiti, Ahmed Boumezzough and Said Safi	Comparative study between computer vision methods for the estimation and detection of the roadway
10h30	Hamed Ould Sidi, Rachid Ellaia, Emmanuel Pagnacco and Ahmed Tchvagher Zeine	Multiobjective Design Optimization using Flower Pollination Algorithm
10h45	Binoy Sasmal and Sayan Roy	ECG Guided Automated Diagnostic Intervention of Cardiac Arrhythmias with Extra-Cardiac Noise Detection using Neural Network
11h00	Muhammad Ghulam Ghouse, Sapiee Jamel, Muhammad Aamir, Muhammad Zulqarnain and Mustafa Mat Deris	i-AEGIS-128: An Improved Authentication Encryption Based on AEGIS-128
11h15	Chakib El Mokhi and Adnane Addaim	Optimal Design of the Cable Layout in Offshore Wind Farms using Firefly Algorithm and Minimum Spanning Tree

WM3: Operational research / Machine learning Wednesday, May 19-2021 (10h00 to 11h00)		
Session Chairs : Prof. Dr. A. ADDAIM / Prof. Dr. Y.a EL HISSI / Prof. Dr. M. BOUTALLINE		
10h00	Sana Ouasaid and Mohammed Saddoune	A dial-a-ride problem with driver preferences
10h15	Kamelia Jahnouni and Hanaa Hachimi	Optimization of project management in Morocco
10h30	Mohamed Chiny, Omar Bencharef and Younes Chihab	Towards a Machine Learning and Datamining approach to identify customer satisfaction factors on Airbnb
10h45	Mohammed-Amine Zyad, Mohamed Gouskir, Belaid Bouikhalene and Abdelmajid	Convolutional Neural Network Approach in Covid-19 Screening in Asymptomatic Individuals

WM4: Telecommunication Wednesday, May 19-2021 (10h00 to 11h00)		
Session Chairs : Prof. Dr. A. BOUMEZZOUGH / Prof. Dr. A. KOULOU / Prof. Dr. D. AIT OMAR/		
10h00	Zakaria Sabir and Aouatif Amine	Connected Vehicles using NDN: Security Concerns and Remaining Challenges
10h15	Mohammed Boutalline, Hassan Faouzi, Radoine Hamzaoui and Belaid Bouikhalene	Use of Docker for Building containerized NS2 in case of MIMC communications
10h30	Hamza Ouamna, Zhou Madini and Younes Zouine	Optimization of a V2V communication in cognitive radio context
10h45	Kharbouche Anass, Madini Zhou and Zouine Younes	Analysis of realistic DS-OCDMA /VLC for V2X communication using optisystem

WA1:Mathematics Wednesday, May 19-2021 (14h30 to 16h00)		
Session Chairs : Prof. Dr. L.S. CHADLI / Prof. Dr. R. AIT DAOUD / Prof. Dr. I. BAKHADACH		
14h30	El Hassene Osmani, Mounir Haddou and Lina Abdallah	A New Approach for solving the Linear Complementarity Problem Using Smoothing Functions.
14h45	Rashid Farkous, Nabil El Fezazi, Said Idrissi and El Houssaine Tissir.	Finite Time H_∞ Controller Design based on Finite Time H_∞ Functional Filter for Linear Discrete-Time Systems
15h00	Elhoucine Ouassam, Nabil Hmina, Belaid Bouikhalene and Hanaa Hachimi	Heuristic Methods: Application to Complex Systems
15h15	Amal Hmimou, M'Barek Iaousse, Zouhair El Hadri, Soumaia Hmimou, Hanaa Hachimi and Mohammed El Kettani Yousfi	Treatment of Correlated Errors in Structural Equation Models
15h30	Issam El Khadiri, Maria Zemzami, Nabil Hmina, Manuel Lagache and Soufiane Belhouideg	Topology Optimization of Structures Obtained by Additive Manufacturing: Case of 3D beam
15h45	Mohamed El Ouaarabi, Chakir Allalou and Adil Abbassi	On the Dirichlet Problem for some Nonlinear Degenerated Elliptic Equations with Weight

WA2: Physics/IT		Wednesday, may 19-2021 (14h30 to 15h30)
Session Chairs : Prof. Dr. M. EL KHECHAFI / Prof. Dr. S. AZZOUZI / Prof. Dr. G. BIKKER		
14h30	Najat Magouh and Lahcen Azrar	Mathematical modeling of linear dynamic response of piezoelectric single Pz52 plates based on Strohl-like Formalism
14h45	Rabi Rabi, Lhoucine Oufni and Hamza Badry	Measurements and CFD modeling of outdoor radon dispersion
15h00	Hamza El-Houari, Lalla Saâdia Chadli and Hicham Moussa	Existence of Solution To M-Kirchhoff System Type
15h15	Noureddine Falih, Brahim Jabir and Rabhi Loubna	Structural Analysis using Galois Lattice Concept for Strategic Business Processes Alignment

WA3: Smart cities/ Environment		Wednesday, May 19-2021 (14h30 to 15h30)
Session Chairs : Prof. Dr. R. GERNDT / Prof. Dr. H. CHAOUI / Prof. Dr. M. ZEMZAMI		
14h30	Oumaima Choukai and Driss Zellij	Multicriteria analysis of different water desalination technologies and positioning of the Seawater Greenhouse technology
14h45	Mohammed Mounni and Mohamed Massour El Aoud	Modeling of reverse osmosis process at a brackish water desalination station
15h00	Youssef Zguir, Abdelghani Chehbouni and Jamal Ezzahar	Calibration and optimization of soil and vegetation parameters for ICARE Soil Vegetation Atmosphere Transfer model
15h15	Zahra Oughannou, Ibtissame Kandrouch, Nour El Houda Chaoui and Habiba Chaoui.	Proposal architecture based on Fog Computing allowing real-time analysis in Smart Cities

SESSION TM

TM1: Big data / Computer Sciences		Thursday, May 20-2021 (10h30 to 12h00)
Session Chairs : Prof. Dr. I. SCHIERING / Prof. Dr. N. MOUSSAID/ Prof. Dr. M. GOUSKIR		
10h30	Dr.G. Suseendran, Dr.D. Akila, Dr.D Balaganesh and Dr.Souvik Pal	Deep learning frequent pattern mining on static semi structured data streams for improving fast speed and complex data streams
10h45	Lalla Amina Charaf, Abdessalam Ait Madi, Adnane Addaim, Imam Alihamidi, Anass Deroussi and Mohammed Saber	A based Access Control Architecture on Fog Computing for IoT Environments
11h00	Karim Abouelmehdi, Rachid Ait Daoud, Hayat Khaloufi and Abderrahim Beni-Hssane	ARisk assessment of SQL injection: An experimental study
11h15	Maxime Goubeaud, Philipp Jouen, Nicolla Gmyrek, Farzin Ghorban, Lucas Schelkes and Anton Kummert	Using Variational Autoencoder to augment Sparse Times series Datasets
11h30	Otman Maarouf, Rachid Al Ayachi and Mohamed Biniz	Amazigh Part Of Speech Tagging using Gated recurrent units (GRU)
11h45	Ali Amkor, Nouredine El Barbri and Kamal Maaider	A comparison between PLSR, SVMR and NARX network for the mint treatment day prediction based on multisensor system

TM2: Control / IoT		Thursday, May 20-2021 (10h30 to 12h00)
Session Chairs : Prof. Dr. H. MOUDNI / Prof. Dr. A. AMINE / Prof. Dr. M. EDAHBI		
10h30	Maxime Goubeaud, Philipp Jouen, Nicolla Gmyrek, Farzin Ghorban and Anton Kummert	White Noise Windows: Data Augmentation for Time Series
10h45	Lamiaa Dahite, Rym Nesrine Guibadj, Cyril Fonlupt, Abdeslam Kadrani and Rachid Benmansour	A Semi Adaptive Large Neighborhood Search for the Maintenance Scheduling and Routing Problem
11h00	Abderrahim Zannou, Abdelhak Boulaalam and El Habib Nfaoui	An Optimal Base Stations Positioning for the Internet of Things Devices
11h15	Pijush Kanti Dutta Pramanik, Nilanjan Sinhababu, Dr. Anand Nayyar and Prasenjit Choudhury	Predicting Device Availability in Mobile Crowd Computing using ConvLSTM
11h30	Sayan Roy and Binoy Sasma	Integration Hierarchical Clustering method and Dendrogram method with Expectation Maximization for identification of the best player cluster

TM3: Mathematics		Thursday, May 20-2021 (10h30 to 11h00)
Session Chairs : Prof. Dr. B. BOUIKHALENE / Prof. Dr. N. JENSEN / Prof. Dr. H. SABIKI		
10h30	Bouchra Ben Amma, Said Melliani and Lalla Saadia Chadli	New Results on the Solution for a Class of Integral Boundary Value Condition of Delay Partial Differential Equations with Fuzzy Data
10h45	Elhoussain Arhrrabi, Mhamed Elomari, Said Melliani and Lalla Saadia Chadli	Fuzzy fractional boundary value problem
11h00	Zaineb El Kharrazi, Sahar Saoud and Zouhir Mahani	Simulation of COVID-19 epidemic spread using Stochastic Differential Equations with Jump diffusion for SIR Model

Wolfenbüttel City

The event will be held in Wolfenbüttel city, a wonderful place to be in.



Welcome!