2023 International Conference on Multimedia Computing, **Networking and Applications** (MCNA 2023)

Valencia, Spain 19-22 June 2023



IEEE Catalog Number: CFP23Y21-POD **ISBN:**

979-8-3503-3928-4

Copyright © 2023 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP23Y21-POD
ISBN (Print-On-Demand):	979-8-3503-3928-4
ISBN (Online):	979-8-3503-3927-7

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400 Fax: (845) 758-2633 E-mail: curran@proceedings.com Web: www.proceedings.com



Table of Contents

Keynote Speeches	
Keynote 1: Integrating Machine Learning and Multi-Agent Systems for Fully Enabling	1
Device-Edge-Cloud Continuum in Complex IoT Worlds	
Professor Giancarlo Fortino, University of Calabria, Italy	
Keynote 2: Bias and Discrimination in AI Systems: From Single-Identity Dimensions to	2
Multi-Discrimination	
Professor Eirini Ntoutsi, Bundeswehr University Munich (UniBw-M), Germany	
Keynote 3: Exploring the Synergy of 3D Integration and Hardware Security	3
Dr. Dofe Jaya, Computer Engineering Department, California State University, USA	
Keynote 4: Digital Transition in Precision Agriculture	4
Dr. Sandra Sendra, Polytechnic University of Valencia, Spain	
MCNA2023	
Interaction of motion energy with gesture, extroversion, dominance, and collaboration in	5
dialogue	
Zohreh Khosrobeigi, Maria Koutsombogera, Carl Vogel	
Assessing Mutlimedia based e-Mental Health Service Provision in Canada	13
Jamil Razmak, Wejdan Farhan, Ghaleb A. El Refae	
Artificial Intelligence Tools in Media and Journalism: Roles and Concerns	19
Rahima Aissani, Rania Abdel-Qader Abdallah, Sawsan Taha, Muhammad Noor Al Adwan	
Turning Smartphone Camera into a Fungal Infection Detector for Chickpea Seed Germination	27
Ali Ahmad, Francisco Javier Diaz, Lorena Parra, Sandra Sendra, Jaime Lloret	
Multi-Label Classification of Emotions in Arabic Tweets From Different Perspectives	33
Shadi Alzubi, Omar Badarneh, Bilal Hawashin, Mahmoud Al-Ayyoub, Nouh Alhindawi, Kholoud	
Alsmearat	
The Theory of Planned Behavior Regarding Artificial Intelligence in Recommendations and	42
Selection of YouTube News Content	
Mohammed Habes, Khalaf Tahat, Dina Tahat, Razaz Waheeb Attar, Ahmed Mansoori, Najia Ketbi	
Determinants Behind Continuous Intention to Use Data Journalism among Emirati Journalists	48
Faycal Farhi, Riadh Jeljeli, Ibtehal Aburezeq, Khaled Zamoum, Samer Ali Al-Shami, Ishaq Hacini	
Runs in the Family: Malware Family Variants Identification through API Sequence and	55
Frequency Analysis	
Aaron Walker, Raj Mani Shukla, Tapadhir Das, Shamik Sengupta	
Enhanced Neural Speech Recognizer for Quranic Recitations	62
Suhad Al-Issa, Mohammad Alshboul, Mahmoud Al-Ayyoub	
Towards a Framework to Assess the Impact of Design Patterns on Software Metrics	67
Mohammed Ghazi Al-Obeidallah	
A Study of Students' Knowledge, Skills, and Attitudes toward the Use of Infographics as a	73
Teaching Tool	
Eman Zaitoun, Sawsan Taha, Sanaa Ashour, Hanadi Rawagah	
Exploiting MIMO and Cognitive Radio for Improved Performance in Indoor Communication	80
Systems	
Ahmad Musa, Rami Halloush, Haythem Bany Salameh, Zaid Bataineh, Rahaf Saliebi	
Detection Of Covid-19 Cases From X-Ray Images Using Capsule-Based Network	85
Donya Ashtiani Haghighi, Amirali Baniasadi	
On the Reliability of Computer Simulations in Evaluating The Structural Performance of	90
Reinforced Concrete Beams Under Dynamic Load	-
Esraa Hijah, Omar Najm, Mohammed Alzard, Zubair Syed	

The Role of Self-Determination Theory in Adopting Metaverse for Healthcare and Diagnostics	95
among Healthcare Professionals	
Riadh Jeljeli, Faycal Farhi, Faisal Shawabkeh, Abdullah Ali Al Marei, Merhan Mohsen Mohammed,	
Sameera Setoutah	
Deep Learning-Based Earthquake Prediction Technique Using Seismic Data	103
Mohammed Elbes, Shadi Alzoubi, Tarek Kanan	
The Reality and Obstacles of Using Computerized Educational Games in Teaching the	109
Students with Intellectual Disability	
Ziyad Ellala, Khawlah Altkhayneh, Samer Abdelhadi	
Medicinal Plants Recognition Using Deep Learning	
Yousef Sharrab, Dimah Al-Fraihat, Monther Tarawneh, Ahmad Sharieh	
Compliant multimedia storage and data extraction from the untrusted and privacy-sensitive	
edge	
Aril Bernhard Ovesen, Tor-Arne Schmidt Nordmo, Dag Johansen	
Exploring Pre-service Mathematics Teachers' Perceptions of teaching using Educational	
Games	
Hanan Shaher Almarashdi, Eman Zaitoun, Khaleel Alarabi	