2024 IEEE 28th International Conference on Intelligent Engineering Systems (INES 2024)

Gammarth, Tunisia
17-19 July 2024

IEEE Catalog Number: CFP24IES-POD
ISBN: 979-8-3503-6760-7

Copyright © 2024 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:	CFP24IES-POD
ISBN (Print-On-Demand):	979-8-3503-6760-7
ISBN (Online):	979-8-3503-6759-1
ISSN:	1543-9259

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

CURRAN ASSOCIATES INC.
proceedings.com

Table of Contents

Topics 3

Committees 4

Topological Analysis of Deep Network Training 11
Andrea De Gaetano

Adventures in Deep Learning-assisted Multimodality Medical Imaging Wonderland 13
Habib Zaidi

A Predictive Model of the Distribution of T-Cell Phenotype Variations 15
Laura D'Orsi, Elena Lo Presti, Giuseppe Giacopelli, Andrea De Gaetano

Enhancing Industry 4.0 Maturity: Integrating Lean Practices as a Key Feature in Artificial Intelligence-Driven Decision Support Model for Companies 21
Ben Ali Oussama, H'Mida Fehmi, Hammami Sondes

Fuzzy Linguistic Signatures and Their Applications 27
Nour Ammar, László T. Kóczy

Artificial Intelligence Tools for Public Relations Practitioners: An Overview 31
Tomislav Volarić, Zoran Tomić, Hrvoje Ljubić

Comparative Analysis of Machine Learning Algorithms in Traffic Mainstream Control on Freeway Networks 37
Mehran Amini, Laszlo T. Koczy

Subjective Expectations on Living with Innovative Digital Implantable Medical Devices at Older Ages 43
Márta Péntek, Áron Hölgyesi, Zsombor Zrubka, Petra Baji, Judit Oszlánszky, Péter Hermann, Levente Kovács, László Gulácsi

Fortifying Decentralized Governance: Introducing Decentralized Autonomous Verification (DAVe) for Decentralized Autonomous Organization (DAOs) Security 49
Haya Altaleb, Beatrix Fregan, Zoltán Rajnai

Nature Inspired Optimization Algorithms in Fractional Order Controller Design 55
Eva-H. Dulf, Alexandru George BerciuLehel Dénes-Fazakas, Levente Kovacs

Gaming Under Stress: Sensor-Monitored Physiological Responses to a Horror Gameplay 59
Krisztián Németh, Judit Szűcs

Universal Settling Model for Energy Communities 65
Péter Kádár

Development of a High-Noise Measurement Instrument in Civil Building Dynamics 71
Bojan Kuljić, Peter Odry

Fuzzy Logic-based Quality of Service Calculation for Real-Time 3D Video Streaming 77
Miklós Vincze, Márta Takács, Miklós Kozlovszky

FITC & TRITC Spot Detection and Analysis at BCL2 Gene Locus as Follicular Lymphoma Marker on 2D Digital Tissue Slides and 3D Serial Sections **83**
Marianna Dimitrova Kucarov, Annamária Csizmadia, Béla Molnár, Miklós Kozlovszky

A Scoping Review of Evaluation and Acceptability Criteria for the Accuracy of Cost Estimates in Health Economic Evaluations **89**
Meriem Fgaier, Zsombor Zrubka

How Effective is Continuous Glucose Monitoring? Cumulative Meta-regression Analysis **95**
Hana Alabdulkarim, Zsombor Zrubka

Robust Sliding Mode Control for a DC Motor with Low Resolution Encoder **99**
Bence Varga, József K. Tar, Richárd Horváth

Securing Real-Time 3D Video Streaming in Digital Pathology - Challenges and Recommendations **105**
Mera Nizam-Edden Saulaiman, Miklós Vincze, Ákos Csilling, Miklos Kozlovszky

Mobile Health Applications used for Health Behaviour Change in Metabolic Syndrome: Protocol for a Scoping Review **111**
Dóra Szerencsés, Zsombor Zrubka

How AI is Transforming and Shaping the Future of Education **115**
Mounir Hamdi

Spatiotemporal Data Access for Map Services based on R-star tree index and LSM tree **117**
Emil Gatial, Zoltán Balogh, Sepideh Hassankhani Dolatabadi

Engineering Related Research in Collaborative Space Developing All-in-One Model **121**
László Horváth

Automated Sound Intensity Measurement Using Doosan Robot: Off-Line Programming for Enhanced Accuracy **127**
Oussema Triki, Raef Cherif

Automated Trajectory Generation and Deep Learning Implementation for 6-DOF Robot Operated Autonomous Propeller Surfaces Grinding **133**
Thanh-Nhan Hoang, Chyi-Yeu Lin

CAN Bus Communication for Door Control in Cleanroom Environments **139**
András Nagy

Graph Neural Networks for Complex Fluid Simulations **145**
Peter Sergeev, Dmitry Kiselev, Ilya Makarov

News Sentiment and Company Reports Impact on Stock Returns **153**
Nikita Pashkov, Ilya Makarov

RGBD Segmentation using Capsule Networks **159**
Artur Podtikhov, Ilya Makarov

Interactive Proof Assistant Based on Resolution Method in First Order Logic **167**
Benjamín Bekiaris, Ján Perháč

Artificial Intelligence In Cybersecurity Applications **175**
Anni Dasho Sharko, Genci Sharko, Silvana Qose

Application of Genetics Algorithms in Cryptography **181**
Peter Pekarčík, Eva Chovancová, Martin Chovanec, Martin Štancel

Prediction of Trustworthiness from Human Demographic & Behavioral Information of An Audio-Visual Corpus **187**
Wai Hun Foo, Syaheerah Lebai Lutfi, Andrea Tick

Conversational AI in Higher Education: Opportunities, Challenges, and Ethical Considerations **195**
Isabella M Venter, Desiree J Cranfield, Renette J Blignaut, Soha Achi, Andrea Tick

Association Rule Mining as Knowledge Infusion into the Mechanics of an eXtended Classifier System **203**
Damijan Novak, Domen Verber, Iztok Fister, Iztok Fister Jr.

Human Body Motion Tracking for Rehabilitation **209**
Moraru Andrei, Eva-H. DulfLehel Dénes-Fazakas, Levente Kovacs

Development of an Innovative, Non-Invasive IT Solution for Human Monitoring and Control of Alcohol Consumption **215**
Enikő Nagy, Tamás Szegedi, Tibor Wührl, Éva Karl, György Molnár

Integrating Human-Computer Interaction Principles in User-Centered Dashboard Design: Insights from Maintenance Management **219**
Sepideh Hassankhani Dolatabadi, Emil Gatial, Ivana Budinská, Zoltán Balogh

Assessment of Visual Signals Properties for Human-Robot Interactions: Effect of the Signal's Background on Moving Animations **225**
Zaouia Siwar, Márk Domonkos, János Botzheim

AI in Healthcare: Applications, Challenges and Opportunities **231**
Erarda Vuka, Lourdes Ruiz Salvador, Esmeralda Kadena

Generative Adversarial Networks for Heterogeneous Unsupervised Domain Adaptation Detection **235**
Homayoun Safarpour Motealegh Mahalegi, Amirfarhad Farhadi, György Molnár, Enikő Nagy

Comparative Study of Q-Learning and SARSA Algorithms for UAV Path Planning in 3D Environments **245**
Imen Zaghbani, Raja Jarray, Soufiene Bouallegue

AI Empowered Solar Energy: Reinforcement Learning and Comparative Analysis for Grid-Connected Photovoltaic Systems Optimization **251**
Banawaz Marwa, Zeddini Mohamed Ali, Berriri Hanen, Mimouni Mohamed Faouzi

Author's Index **297**