



IARIA Congress 2023

The 2023 IARIA Annual Congress on Frontiers in Science, Technology,
Services, and Applications

November 13th – 17th, 2023

Valencia, Spain

IARIA Congress 2023 Editors

Hans-Werner Sehring, Nordakademie – University of Applied Sciences, Hamburg,
Germany

Steve Chan, Decision Engineering Analysis Laboratory, VTIRL, VT, USA

Isaac Caicedo-Castro, Universidad de Córdoba, Colombia

Arcady Zhukov, University of Basque Country, UPV/EHU, Spain

Roy Sterritt, Ulster University, UK

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2023) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed with permission by Curran Associates, Inc. (2024)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

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
Email: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

| | |
|--|----|
| Fostering Trust on Machine Learning Inferences <i>Dalmo Cirne</i> | 1 |
| Social Requirements for Designing Self-Adaptive Privacy Schemes in Cloud: The Interrelation of Social Identity with Self Disclosure Practices <i>Angeliki Kitsiou, Maria Sideri, Aikaterini – Georgia Mavroeidi, Katerina Vgena, Eleni Tzortzaki, Michail Pantelelis, Stavros Simou, and Christos Kalloniatis</i> | 5 |
| Utilization of Ozone Water Generators for Preventing Infection in Home Care <i>Koichi Umimoto, Shinichi Iguchi, Yoshimasa Shimamoto, Kastunori Tachibana, Syunji Nagata, and Yuki Nakamura</i> | 11 |
| Satellite Selection Algorithm to Optimize a Solution for Autonomous Driving Applications <i>Tiago Goncalves, Gianmarco Fedeli, Clara Lazaro, Helder Silva, and Telmo Vieira</i> | 14 |
| The Screen is not Flat <i>Luciane Maria Fadel</i> | 20 |
| Exploring the Temperature Dependent Magnetic Properties and Magnetoimpedance Effect in Fe-rich Microwires for Temperature Monitoring <i>Paula Corte-Leon, Ivan Skorvanek, Frantisek Andrejka, Valentina Zhukova, Mihail Ipatov, and Arcady Zhukov</i> | 26 |
| SLAM-based Mapping in Truck-and-Robot System for Last-Mile Delivery Automation <i>Ryo Nakamura, Masafumi Hashimoto, and Kazuhiko Takahashi</i> | 31 |
| A Tool for Automating Sizing in Agile Development Using the COSMIC Method <i>Bruel Gerancon and Sylvie Trudel</i> | 38 |
| Towards Hypothesis-driven Forensic Text Exploration System <i>Jenny Felser, Dirk Labudde, and Michael Spranger</i> | 42 |
| Comparison of 2D Virtual Learning Environments with Classic Video Conferencing Systems for Tertiary Education <i>Gerhard Hube, Kevin Pfeffel, and Nicholas Mueller</i> | 48 |
| Development and Application of a New Ontology in the Context of Hybrid AC/DC Grids <i>Alessandro Rossi, Marzia Mammina, Jawad Kazmi, Zhiyu Pan, Charles Emehel, Bharath Varsh Rao, and Antonello Monti</i> | 58 |
| An Autonomic Approach to Security Incident Response and Prevention in Cloud Computing <i>Glenn Russell and Roy Sterritt</i> | 65 |

| | |
|---|-----|
| AC/DC: Autonomic Computing to Maintain Drone Fleet Continuity <i>Fiachra Merwick and Roy Sterritt</i> | 73 |
| Autonomic Computing in the Cloud: An Overview of Past, Present and Future Trends <i>Alistair McLean and Roy Sterritt</i> | 77 |
| Autonomic Computing for Autonomous Vehicles <i>Alastair Martin and Roy Sterritt</i> | 83 |
| Development of Free Space Microwave Sensing of Carbon Fiber Composites with Ferromagnetic Microwire Inclusions <i>Valentina Zhukova, Mihail Ipatov, Paula Corte-Leon, Alvaro Gonzalez, Alfonso Garcia-Gomez, Francisco Javier Vallejo, Peio Olaskoaga, Johan Malm, Christer Johansson, Rafael Garcia-Etxabe, and Arcady Zhukov</i> | 88 |
| Electric Network Frequency Optical Sensing Devices <i>Christos Moysiadis, Georgios Karantaidis, and Constantine Kotropoulos</i> | 94 |
| Physical Demonstrator of Medical Imaging Unit: Threat Analysis and Protection Strategies in Cybersecurity <i>Marina Galiano Botella</i> | 100 |
| Towards a Secure City: The Contribution of the Smart City Physical Demonstrator in Threat Assessment <i>Marina Galiano Botella, Eduardo Ortega Serrano, and Elvira Lara Maudos</i> | 104 |
| Hybrid Networking Platform for Minority Groups in Accessing Labour Market <i>Cecilia Olivieri, Agathe Semaili, Davide Carminati, and Lorenzo Maggio Laquidara</i> | 108 |
| Verification Tasks through Deep Learning in a Semantic Information Extraction System <i>Angel Luis Garrido, Norman U. Bellorin, Alvaro Peiro, and Eduardo Mena</i> | 111 |
| Model-supported Software Creation: Towards Holistic Model-driven Software Engineering <i>Hans-Werner Sehring</i> | 113 |
| Improvement of Fatty Acids Composition of a Microalga Isolated from the Moroccan Seawater for Biodiesel Production <i>Salima Ouled Hajja, Miloudia Slaoui, and Houria El Bakraoui</i> | 119 |
| Sensorization and Optimization of Industrial Graphic Arts Machinery Using Artificial Intelligence Techniques <i>Angel Luis Garrido, Jonathan Rodriguez, Mariano Sanchez, Jose Manuel Anton, Roberto Castan, Susana Sangiao, Carlos Bobed, and Eduardo Mena</i> | 121 |
| Cod Catch Forecasting through Machine Learning Algorithms at the Haul Level <i>Huamin Ren, Yajie Liu, and Keshav Prasad Paudel</i> | 123 |

| | |
|--|-----|
| Non-deterministic Operation Profiles Based on Multi-Layer Interest Landscapes for Autonomous Robotic Teams <i>Florian Segor, Igor Tchouchenkov, Aleksej Buller, and Matthias Kollmann</i> | 128 |
| Applying Multimodal Data to Meta Learning for Time-Series Analysis in CPS <i>Philipp Ruf, Christoph Reich, and Djaffar Ould-Abdeslam</i> | 136 |
| A Multivocal Review on Derivation Games <i>Diego Castro and Claudia Werner</i> | 144 |
| Exploring Product Line Concepts in Game Building <i>Diego Castro and Claudia Werner</i> | 150 |
| Application of Three-Phase Methodology for Retrofit 4.0 in Legacy Industrial Plants <i>Andrei Tchepurnoy Machado, Renan Yamaguti, Raphael Montali Assumpcao, Omar Carvalho Branquinho, and Paulo Cardieri</i> | 153 |
| BCI-based Game Control to Boost Focus and Attention in Students <i>Komalpreet Kaur and Manish Wadhwa</i> | 160 |
| Commute Tracking Mentor Tool for Automobile to Decrease Car Accidents <i>Mario Ervin and Kanwalinderjit Kaur</i> | 164 |
| Direct Democracy System Architecture for Sustainable Community Participation <i>Aderonke Thompson, Nikolaos Papakonstantinou, and Dharmendra Sharma</i> | 170 |
| Forecasting Failure Risk in Early Mathematics and Physical Science Courses in the Bachelor's Degree in Engineering <i>Isaac Caicedo-Castro, Mario Macea-Anaya, and Samir Castano-Rivera</i> | 177 |
| An Exercise Recommendation System While Performing Daily Activities Based on Contextual Information <i>Mizuki Kobayashi and Kaori Fujinami</i> | 188 |
| The Triumvirate of Bespoke Diverse Hybridized Activation Functions, Adaptive Momentum, and Enhanced Entropic Wavelet Energy Spectrum Discernment for Higher Efficacy Detection of Artificial Intelligence-centric Attacks <i>Steve Chan</i> | 196 |
| Moment Generating Function Based Calculation of Average Bit Error Probability in an α - μ Fading Environment with Selection Diversity Receiver <i>Dragana Krstic, Suad Suljovic, Devendra S. Gurjar, and Suneel Yadav</i> | 203 |
| Estimating Text Similarity based on Semantic Concept Embeddings <i>Tim vor der Bruck and Marc Pouly</i> | 208 |

