

2026 International Conference on Development and Application Systems (DAS 2026)

**Suceava, Romania
21-23 May 2026**

IEEE Catalog Number:
ISBN:

CFP2665Y-POD
979-8-3315-8387-3



Copyright © 2026, IEEE

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:	CFP2665Y-POD
ISBN (Print-On-Demand):	979-8-3315-8387-3
ISBN (Online):	979-8-3315-8386-6

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

Proportionality Assessment Optimization Model in Military Operations.....	1
<i>Clara Maathuis</i>	
Intelligent Multi-Agent Digital Twin Architecture for Modeling and Monitoring Catastrophic Events.....	7
<i>Victor Ababii, Viorica Sudacevschi, Olesea Borozan, Iulian Lungu, Neonil Rosca, Silvia Munteanu</i>	
Tyndall-Effect-Based Optical Monitoring of Micro-Plastic Pollution in Aquatic Environments.....	15
<i>Victor Ababii, Viorica Sudacevschi, Galina Marusic, Viorel Carbune</i>	
Comparative Analysis of Multispectral Sensors (MicaSense RedEdge-MX, FLIR Vue Pro R, Parrot Sequoia) and Image Processing for Crop Health Assessment	21
<i>Alisa Maşnic, Arina Moisei</i>	
Controller Tuning for First- to Fourth-Order Inertia Object Models with Astatic Behavior Using the Polynomial Method	28
<i>Bartolomeu Izvoreanu, Adrian Secrieru, Nadejda Palamarcu, Ion Fiodorov, Dumitru Moraru</i>	
Analytical Determination of Fractional Orders in FOPID Controllers Based on Closed-Loop Dynamics.....	34
<i>Ion Fiodorov, Bartolomeu Izvoreanu, Irina Cojuhari, Dumitru Moraru, Nadejda Palamarcu</i>	
Prototyping an AI-Based Waste Monitoring and Salubritization Route Optimization System.....	40
<i>Trohin Vlad, Dorogan Andrei</i>	
Cost-Free SCADA Software Solution Developed in Stefan cel Mare University	46
<i>Mihai Rata, Radu Fechet, Adrian Graur, Gabriela Rata</i>	
Comparative Analysis under Laboratory Conditions of the Neutral Grounding Techniques in Electrical Networks	52
<i>Daniela-Florentina Roşca, Ana-Bianca Mititelu, Pavel Atănăsoae</i>	
A Multi-Level Computing Architecture Inspired by the Human Brain: A Neuromorphic Perspective	58
<i>Vadim Struna, Mariana Osovschi, Iulian Lungu</i>	
Developing Custom Arc Flash Protection Logic for Non-Standard BESS Substation Configurations	64
<i>Ivan Burdukov</i>	
A RISC-V Pipeline Simulation Framework for Comparative Evaluation of nMPRA and nHSE Real-Time Microarchitectures	70
<i>Nicolai Iuga, Vasile Gheorghita Gaitan, Tudor Petrescu</i>	
Implementation and Testing of B-Dot Algorithm on CubeSat 2U Nanosatellite Prototype	77
<i>Andrei Spatari, Vladimir Melnic, Maxim Kapustianski, Alexei Martiniuc</i>	
Robust Nonlinear Control of a CCM Flyback Converter Under CPL-Induced Dynamics.....	84
<i>Saadi Ismeal Al-Saadoun, Sarah Kanaan Hamzah</i>	
MATLAB Simulation of a Pure B-dot Algorithm for CubeSat-Like Nadir Pointing in Orbit.....	91
<i>Maxim Kapustianski, Anton Seniusin, Andrei Spatari, Vladimir Melnic, Alexei Martiniuc</i>	

A Mean-Value Performability Assessment of IoMT Systems Based-on Stochastic Reward Net and Fuzzy Lz-transform Method.....	97
<i>Moraru Victor, Guțuleac Emilian, Alexei Anatol, Gribincea Dorin, Cuzmin Simion, Seniuşin Anton</i>	
Performance Evaluation of ZTNA for Hybrid Academic Networks.....	103
<i>Valentina Tirsu, Lilia Sava, Vladimir Mirovski, Cristin Djanoslavschii</i>	
Integration of Project Management in the Implementation of 5G Infrastructures for High-Capacity Public Venues	109
<i>Valentina Tirsu, Lilia Sava, Dinu Ţurcanu, Vladimir Mirovski</i>	
Validation of Min-Max and Max-Min Modified Discrete Uniform Distributions as Reliability Models Using Pseudorandom Number Generators in Python	115
<i>Valentina Astafi, Alexei Leahu</i>	
A Computer Vision Framework for Context-Aware Adaptive Vehicular Visible Light Communications.....	121
<i>Mykhailo Lebid, Alin-Mihai Căilean, Cătălin Beguni, Eduard Zadobrischi, Sebastian-Andrei Avătămăniţei</i>	
Mathematical Models and System-Level Analysis of Modern Geolocation Technologies	128
<i>Lilia Rotaru, Irina Cojuhari, Maria Gutu, Artur Kazak</i>	
Bridging Human-Centric Lighting and Visible Light Communications: A Review of Principles, Technologies and Applications in Tourism and Related Fields	136
<i>Cassandra-Mariana Mănica, Alin-Mihai Căilean, Cătălin Beguni, Eduard Zadobrischi, Sebastian-Andrei Avătămăniţei, Gabriela Ţigu</i>	
Performance Evaluation of OTFS and OFDM Technologies in High Mobility Scenarios.....	144
<i>Lucian Ştefan, Partemie-Marian Mutescu, Razvan Marius Mihai, Alexandru Lavric</i>	
A Practical Research Approach to Buck Converter Modeling and Digital Control in MATLAB/Simulink.....	151
<i>Cornel-Iulian Postolache, Dorin O. Neacşu</i>	
On the Introduction of Vertical GaN MOSFET in High-Voltage Synchronous Buck Converters	159
<i>Tudorel Leampăr, Dorin O. Neacşu</i>	
Experimental Evaluation of Planar Inductors for Application in Buck-Type DC-DC Converters	165
<i>Olimpian T. Paulet, Dorin O. Neacsu</i>	
On the statistical analysis of the response time of some databases modeled as a queueing systems.....	171
<i>Dina Buza, Alexei Leahu</i>	
Language-Agnostic Fault Injection for VHDL and Mixed-HDL Designs in PyUVM-Based Verification	177
<i>Salma Khaled Hanafy, Mohamed Fathy Abu-ElYazeed</i>	
AI-Enhanced X-ray Computed Tomography for Microelectronics: A Brief Review of Machine Learning and Deep Learning Integration in Non-Destructive Failure Analysis	183
<i>Marina Adriana Mercioni, Cătălin Daniel Căleanu, Raul Ciprian Ionel</i>	
Big Data Analysis on Cloud and Edge Systems in the Automotive Industry: A Brief Review.....	189
<i>Marina Adriana Mercioni, Cătălin Daniel Căleanu, Mihail Gaianu, Dan Pescaru</i>	

An approach to determining the set of devices and technologies for a smart home	195
<i>Bolun Ion, Catruc Adriana, Cojocaru Svetlana</i>	
Scholar Augment: An End-to-End Multi-LLM Platform for Accelerating Systematic Literature Reviews and Semantic Corpus Analysis.....	203
<i>Mihai-Emanuel Spiță, Ovidiu-Andrei Schipor</i>	
ALMA: A Multimodal Companion Powered by Large Language Models for Alzheimer's Reminiscence Therapy	209
<i>Mihai-Emanuel Spiță, Ioana-Veronica Vavrici, Evelina Miron</i>	
A Multi-Criterion Taxonomy of Cybersecurity Beneficiaries	216
<i>Svetlana Cojocaru, Alexandru-Andrei Ghita, Ludmila Peca, Marius Dumitrascu, Rostislav Călin</i>	
Multimodal Content Vectorization for Video Event Identification Based on Textual Descriptions	224
<i>Ionel Denis Petriceanu, Mirela Danubianu</i>	
Ultrasound-based Detection of Polycystic Ovary Morphology using YOLO26 on Custom Datasets.....	229
<i>Marinela Leampar, Iulian B. Ciocoiu</i>	
Real-Time Speech Emotion Recognition Using Acoustic Features and a Probabilistic Heuristic Classifier.....	235
<i>Olesea Borozan, Silvia Munteanu, Nicu Drumea, Andrei Clima</i>	
Performance Evaluation of Java/Spring Boot Location-Tracking MVP Based on Relational Databases.....	241
<i>Volodymyr Franiv, Roman Oliinyk, Mykola Brych, Oleksii Kovalisko, Oleg Kushnir, Vasyl Vasyuta</i>	
Artificial Intelligence in Data Governance for Big Data Ecosystems	247
<i>Andrei Marcel Paraschiv, Mirela Danubianu, Bogdănel Constantin Grădinaru</i>	
Enhancing Cultural Heritage Narratives with On-the-Fly Mixed Reality Visualizations.....	254
<i>Cosmin-Mihai Pascariu, Radu-Daniel Vatavu</i>	
Lightweight Landmark-Based Gesture Recognition System for Romanian Sign Language.....	260
<i>Andrei Enachi, Corneliu Octavian Turcu, George Culea, Dragos Alexandru Andrioaia, Andrei Gabriel Ungureanu, Bogdan Constantin Sghera</i>	
A Comparative Study of Regression Techniques for Touch-based Input and Adaptive User Interfaces	266
<i>Irina Petrariu, Laura-Bianca Bilius, Liviu Mitrofan, Sebastian Crintea, Robert Croitor, Tudor Horomnea</i>	
Cross-Border Transfer Learning for 1-km Soil Moisture Downscaling in Romania.....	272
<i>Mihai-Bogdan Stan, Stefan-Gheorghe Pentiu</i>	
Blockchain and Artificial Intelligence: Convergence, Applications and Challenges.....	279
<i>Andrada-Cristina Artenie, Catalin Daniel Morar, Daniela Elena Popescu</i>	
Mapping Technological Dimensions of XR-based Cognitive Augmentation Systems.....	286
<i>Mihail Terenti, Laura-Bianca Bilius, Andrei Braicov, Tatiana Veverița, Ilona Popovici, Radu- Daniel Vatavu</i>	
Evaluating User Experience and Cognitive Load in AR-supported STEM Education.....	292
<i>Andrei Braicov, Tatiana Veverița, Mihail Terenti, Ivan Budanaev</i>	

HTTP Security Headers as a Semantic Policy Layer for Multichain Interoperability	298
<i>Ernest Bîta, Ana Țurcan, Ciprian Dobre, Dumitru Ciorbă</i>	
A Microservice-Based Architecture for Unmanned Aerial Vehicle Control Systems.....	305
<i>Ioan Gorgos, Valeriu Cojocaru, Viorel Carbune, Maria Gutu</i>	
Contributions on the creation of a Forestry Digital Twin through procedural generation and multimodal data capture	313
<i>Vițega Mihai, Turcu Corneliu Octavian</i>	
A Mobile-Based Omnidirectional Control Interface for Full-Dome Planetariums.....	319
<i>Lucian-Mihai Cosovanu, Cezar-Eduard Leșanu, Gabriel Cramariuc</i>	
Scenario-Based Forecasting of Epidemics Using Generative AI and Traditional Methods: An Empirical Evaluation on Epidemiological Data	326
<i>Yurii Oliinyk, Stefan-Gheorghe Pentiu</i>	
AI-driven diagnostic system for brain tumor classification: a CNN multi-class classification with cross-dataset validation	334
<i>Alesea Morev, Alexandru Lavric, Anastasia Elinețchi</i>	
A Review of Power Distribution Architecture Choices for Servers Within Data Centers	340
<i>D. Neacșu</i>	
Software Architecture Design for Gesture Interaction: Components, Layers, or Graphs?	341
<i>J. Vanderdonckt</i>	
Advanced Methods for Condition Monitoring of Electric Motors Based on the Analysis of Electrical Quantities	342
<i>J. Antonino-Daviu</i>	
Digital Systems on Chip (SoC) Design Methods - Evolution and Trends.....	343
<i>M. Cirstea</i>	
Designing Extended Reality Worlds that Expand Human Abilities.....	345
<i>R. Vatavu</i>	
From Software Agents to Agentic Scientists: Towards Self-Adaptive Collective Intelligence in Complex Environments	346
<i>W. Wu</i>	

Author Index