

2025 MIPRO 48th ICT and Electronics Convention

**Opatija, Croatia
2-6 June 2025**

Pages 1-728



**IEEE Catalog Number: CFP2539K-POD
ISBN: 979-8-3315-3598-8**

**Copyright © 2025 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:	CFP2539K-POD
ISBN (Print-On-Demand):	979-8-3315-3598-8
ISBN (Online):	979-8-3315-3597-1
ISSN:	1847-3938

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

2025 MIPRO 48th ICT and Electronics Convention

Artificial Intelligence Systems

Autonomous Control and Path Planning of UAV with Deep Reinforcement Learning	1
J. Mileski, M. Toshevska, S. Gievska	
Architecture of an AI on Device Board for Local, Automated Training and Inference	6
M. Schacht, J. Murach, A. Guldner, L. Begic Fazlic, L. Creutz, S. Naumann, K.-U. Gollmer, G. Dartmann	
Permutational Logical Networks	12
G.A. Oparin, V.G. Bogdanova, A.A. Pashinin	
Translating Federated Learning Algorithms in Python into CSP Processes Using ChatGPT	18
M. Popovic, M. Popovic, M. Djukic, I. Basiccevic	
Evolving Priority Rules to Optimize Multi-Objective Criteria for the Resource-Constrained Project Scheduling Problem	24
J. Sabljo, R. Coric, M. Djumic, M. Djurasevic	
Clustering Approaches in Vehicle Routing Problems: A Comparative Study on Real-World Scenarios	30
S. Delalic, R. Mutapcic, I. Fejzic	
Template Matching in Images Using Segmented Normalized Cross-Correlation	36
D. Marusic, S. Popovic, Z. Kalafatic	
MRI Image Reconstruction Using Adaptive Sampling and Diffusion Models	43
T. Krcmar, D. Sabanovic, M. Habijan, I. Galic, I. Lukic	
Advancements in Fire Detection: A Review of Computer Vision and Deep Learning Approaches	50
A. Antunovic, R. Markovic, M. Karajko, E.A. Fernandez, G. Martinovic, I. Aleksi, J. Balen	
Advancing Welding Automation: Optimized Weld Pool Segmentation via Hybrid Model Integration and Two-Stage Data Augmentation	57
S. Zhang, A. Zakariya, T. Aaltonen	
A Computer Vision System for Real-time Vehicular Traffic Management	63
D. Petkov Sofiykov, P.V. Georgieva	
Siamese Neural Networks for Visual Place Recognition	69
J. Maltar, L. Borozan	

Deep Learning-Based System for Detection and Classification of Household Entry Points Using YOLOv11	75
B. Kotevski, S. Koceski, N. Koceska	
Review of Modern Chatbot Technologies: Performance, Capabilities and Applications	81
R. Rana, Z.W. Bhuiyan, M.H. Limon, A. Rahman, M. Hasan, T. Habib	
Exploring Large Language Models for Data Augmentation: A Case Study for Text Style Transfer	87
M. Toshevska, G. Mirceva, S. Gievska	
Integrating External Knowledge with LLMs: A Systematic Review of RAG Approaches	93
I. Mikulic, M. Vlais, G. Delac, M. Silic, K. Vladimir	
Automating Prompt Leakage Attacks on Large Language Models Using Agentic Approach	99
T. Sternak, D. Runje, D. Granosa, C. Wang	
Torturing the Turing Test with Suggestive Anagrams in Slavic Languages	105
S. Ribic, R. Turcinhodzic Mulahasanovic, K. Hodzic	
Fine-Tuning BART for Croatian Abstractive Text Summarization Using a Novel News Dataset	111
V. Davidovic, S. Martincic Ipsic	
Phishing Attacks in the Age of Embeddings: A Word-Vector Approach to Cyber Threats	118
I. Dundjer, S. Seljan, M. Odak	
Efficient CV Parsing: Lightweight Models and Heuristic Methods for Diverse and Non-Standard Formats	125
S. Delalic, Z. Kadric, J. Jerkic, F. Mehmedovic	
Enhancing LLMs with LoRA Fine-Tuning Using Medical Data and Knowledge Graph Enrichment for Improved Healthcare Outcomes	131
A. Jankov, M. Toshevska, S. Gievska	
Emotions in Eurovision Song Contest Lyrics	137
D. Buzic, J. Dobsa	
A Comparison of GEC tools for Grammatical Error Correction in English	143
J. Virtanen, M. Toshevska	
A Review of Time Series Dimensionality Reduction Methods	149
M. Vlais, I. Mikulic, G. Delac, M. Silic, K. Vladimir	
xAAD in Practice: Explainable Anomaly Detection in Cybersecurity	155
D. Kopljar, V. Drvar, J. Babic, V. Podobnik	

Engine for Discovery of Personal Data Based on Machine Learning D. Orescanin, V. Kuzina	161
Leveraging Graph Attention Networks for Blood-Brain Barrier Permeation Prediction V. Vodilovska, N. Ackovska, I. Ivanoska	168
Comparison of Image-based Deep Learning Classification Models for Motor Imagery EEG Signals L. Batistic, S. Ljubic, K. Griparic, D. Susanj	174
A Data-Driven Approach for Predicting Solar Energy Production Using Machine Learning Techniques L. Dobruna, A. Berisha	180
Optimizing Keyword Spotting Classifier Based on Tiny Machine Learning for Low-Power Embedded Devices P. Medur, M. Lubbers, G. Mause	186
Prediction of the Number of Parcels Sent Via Express Mail Service in a Time Series Using Statistical and Machine Learning Models M.K. Banjanin, M. Stojic, M. Vasiljevic, A. Stjepanovic, G. Jotanovic, M. Husic, G. Jausevac	192
A Framework for Ontology-Driven Multiagent System Generation B. Okresa Djuric, C. Carrascosa	198
Bridging the Gap Between Model Complexity and Data Availability for Forecasting Tourist Activity D. Demeterfi, T. Kovacevic, Z. Kostanjcar, V. Bilas	204
 Business Intelligence Systems and Big Data Processing	
Assessing Spatial Accuracy of Nature Observations Using the LLM-Based Geoparser Service I. Pavic, F. Varga, I. Cavrak	210
Can LLM Pass a CS1 Course? I. Mekterovic, L. Brkic	216
Semantic and Other Serializations of Archival Description: Impact on the Understanding, Processing, and Use of Archival Materials A. Rajh	222
Large-Scale Molecular Similarity Search using Vector Database D. Begusic, D. Pintar, Z. Smole, B. Dalbelo Basic	228

Peoplet: Exploring Organizational Structures through Social Network Analysis	234
A. Mestrovic, S. Beliga, D. Pitoski	
Enhancing Warehouse Efficiency: Estimating Order Picking Complexity for Improved Performance	240
S. Delalic, S. Behic, H. Goralija, Z. Sabanac	
Enhancing Accuracy in Peer Assessment by Addressing Bias and Outliers through Calibration Method	246
L. Brkic, I. Mekterovic, M. Fertalj	
Overview of Machine Learning Methods for Analyzing and Clustering of Flood Wave Data	252
L. Stefan, L. Djud, D. Pintar, K. Potocki	
 Computers in Education 	
From Abstract Theory to Immersive Reality: Addressing the XR Dimensions in Education through a Hybrid Instructional Design Model	258
C. Karachristos, T. Kouvara, T. Orphanoudakis	
Bridging Attention Spans: The Role of YouTube Shorts in Driving Engagement for Long-Form Educational Content	264
V. Simovic, A. Pendjer, V. Zuppa Baksa	
The Importance of Introductory VILT as a Measure to Activate Learners to Develop Their Self-Directed Learning Behavior	269
D. Lukac, I. Lukac	
Simplifying Edge AI: A Block-based Development Platform for IoT Applications	274
A. Koss, G. Dartmann, K.-U. Gollmer, L. Begic	
Low-Code Programming Tools and Portable Sensor Devices for Data Analysis	280
D. Junk, S. Haab, L. Sitzius, M. Gisch, L. Begic Fazlic, G. Dartmann	
Ethical Considerations of ChatGPT Integration in High School Education	286
J. Jung, Z. Deljac	
The Use of Information Technology Among Students Whose Study Programs are not Primarily IT-Oriented	291
S. Jovicic, D. Nizetic, M. Bednjanec	
A Comparative Study of AI Tool Use in English and Croatian Among the Students of Zagreb University of Applied Sciences	295
L. Bacic, M. Krstinic, T. Tolnauer Ackermann	
Using Instrumentation to Infer Difficulty Levels in Isomorphic Questions	301
Z. Li, S. Manoharan, X. Ye	

Methods and Tools for Efficiently Evaluating Students' Understanding During Lectures in Electrical Engineering	309
V. Zuppa Baksa, A. Bednjanec, L. Tepes Golubic	
First Year CS Students Exploring Implications of Social Media Recommendation Algorithms	315
M. Apiola	
The Application of ICT in the Learning and Teaching Process - Opinions and Attitudes of Teachers in Croatia	321
I. Maric, B. Rumenovic	
Hour of Code: Classroom Escape	328
J. Zufic, A. Zufic, S. Bodis	
Transforming Academic Planning: Agile Approaches to Streamlining University Operations	333
B. Abazi Chaushi, A. Chaushi	
A Systematic Review of Opportunities to Overcome Challenges in Weekly Schedule Planning	339
V. Georgiev, K. Rasheva-Yordanova	
Usage of Chatbot Techniques for Automation of Knowledge Tests	345
M. Zagar, I. Branica, D. Delija, G. Sirovatka	
Integrating the DigComp Framework: A University-Wide Initiative to Develop First-Year Digital Competencies	351
E. Idrizi, L. Nuredini-Mehmedi	
An Approach to Developing Speech Skills in Children through the Integration of Virtual Tours in Education	357
S. Stoev, K. Rasheva-Yordanova, I. Kostadinova, G. Dimitrov, R. Dimitrova	
Revolutionizing Control Engineering Education: Bridging Theory and Practice with MATLAB, Real-Time Experiments and Hands-On Labs	363
W. Werth, C. Ungermanns	
Mechatronics Meets Education: From Classroom Practice to Automated Sound Velocity Experiments	368
C. Ungermanns, W. Werth, G. Tinkler, A. Varga	
Evaluation of Search Engines and AI Chatbots Using A/B Testing	373
D. Skopljanac-Macina, T. Mesic	
A Web Interface for Evaluating Search Engines and AI Chatbots	379
D. Skopljanac-Macina, T. Mesic	

Leveraging Keystroke Dynamics for Detecting Academic Dishonesty in Online Assessments	385
L. Elhiny, U. Speidel, X. Ye, S. Manoharan	
Analyzing the Results of a Study of the Effectiveness of Developing Students' Cybersecurity Skills	390
Y. Rudenko, L. Sytnyk, O. Bieliaieva, N. Dehtiarova, A. Barabash	
Development of Responsible Attitudes Towards AI-Generated Results Among Future Computer Science Teachers	396
O. Zhmud, N. Dehtiarova, O. Viunenko, V. Hryhorenko, I. Lantukh, O. Didkivskyi	
Pilot Study: Epsilon-Greedy Algorithm in AI-Based Web Application for Mastering Multiplication Tables	401
L. Drozdjek, I. Pesek	
Using Dashboards in the Development of Students' Analytical Thinking	406
Y. Rudenko, K. Zhurba, I. Bekh, S. Petrenko, A. Bobokalo, O.V. Semenikhina	
Printed Circuit Board Design in Computer-Aided Design Tool	412
P. Hadrovic, T. Alajbeg, K. Osman, M. Sokele	
Design and Implementation of a Curriculum on Digital Health Tools for Physical Therapists	418
A. Zaikina, D. Surin, O. Shukatka, N. Oliinyk, S. Kharchenko, O.V. Semenikhina	
Enhancing Accessibility of Learning Analytics System User Interface: A Case Study	424
M. Mihaljevic, V. Kirinic	
Frequency of Use and User Feelings When Using ChatGPT	430
J. Zufic, A. Debeljuh, D. Kukuljan	
Harnessing Generative AI as Assistant in Curriculum with Modular Approach Implementation: A New Frontier in Teaching	437
K. Macek Blazeka	
Reasons for the Spread of Python Programming Language in Hungarian Public Education	444
E.K. Szeremi, A. Pasztor, Z. Porkolab	
The MEMA Method in Early Programming Education: Experiences of Turkish Teachers in Lower Grades of Primary School	450
S. Babic, M. Cicin Sain, O.F. Metin	
User Awareness and Website Implementation of Cookie Notices: A Comparative Study in Croatia	455
M. Gagula, M. Hell	

AI as a Study Companion: An Exploration of Student Experiences at the Faculty of Humanities and Social Sciences, Zagreb, Croatia R. Vrana	461
Using Humanoid Robots to Enhance Student Motivation: Practical Applications in English Language Lessons I. Ruzic, I. Balaban, J. Badjari	467
Non-Traditional Methods for Teaching Python Programming with Large Language Models G. Bubas, M. Konecki	473
Trends and Security Challenges of Artificial Intelligence Use in Higher Education: A Systematic Review I. Tucak-Roguljic, I. Djurdjevic Babic	479
Blockchain Technology in Regulating the Truthfulness of Digital Content J. Blazi, B. Markovic, L. Dukaric	484
Transforming Education through the Metaverse: Immersive Technologies and Gamification for Skill Development J. Dorr, L. Aylon	489
Why the Drone Forensics in the Graduate Cybersecurity Curriculum D. Delija, G. Sirovatka, I. Spoljaric, M. Zagar, S. Gruicic	495
What We See, What We Do Not See - Have You Ever Thought About the Energy Consumption of ICT? H. Jaakkola, J. Henno, J. Makela	501
Modern IT Technologies J. Henno, H. Jaakkola, J. Makela	508
Prospective Kindergarten Teachers' Readiness to Integrate Computational Thinking into Early Childhood Education A. Mirkovic Mogus, R. Varga, V. Kiralj	514
Implementing Machine Learning Algorithms for Personalizing the Learning Process and Real-Time Monitoring of Student Activity in University Environments Y. Januzaj, E. Beqiri, A. Luma	520
Gamification and Humanoid Robots in Education: Enhancing Student Engagement and Learning Outcomes I. Ruzic	526
Adoption of Artificial Intelligence and Humnaoid Robots in Education: Educators' Motivation and Readiness in Croatia M. Matus, I. Balaban	531

Women's Involvement in the Field of Computer Programming: A Systematic Mapping Study	536
M. Macek, M. Novak	
Integrating the STEAM Framework into the Final Thesis Process at the Faculty of Economics	542
J. Stofa, M. Vejacka	
Analysis of Multimedia Projects Created in MIT Scratch Using Artificial Intelligence	547
J. Gunis, L. Snajder, L. Antoni, D. Kotlarova, K. Brinzikova, S. Krajci, Z. Tkacova, P. Elias	
Benefits of Micro-Credentials at Higher Education Institutions	553
D. Palova, J. Zoricakova	
Digital Transformation of Higher Education Institutions	559
D. Palova, J. Zoricakova	
Moodle and MS Teams Can Eliminate the Possibility of Students Cheating in Online Testing	565
M. Pokorny	
Education in the Field of Electronic Banking in University Courses	570
M. Vejacka, J. Stofa	
The Influence of Geometry Visual Tasks on Students' Learning Motivation	576
A.O. Rozumenko, A.M. Rozumenko, A.O. Yurchenko, I.V. Stotskyi, V.R. Bespalyi, O.V. Semenikhina	
Transformation of Homework in Mathematics in the Digital Era	582
M. Drushlyak, T. Lukashova, D. Ielizarenko, O. Nadtochy	
Mobile Planetarium as a Means for Popularization of STEM Education	591
M. Drushlyak, A.O. Yurchenko, Y. Khvorostina, M. Soroka, I. Gorovoy, O.V. Semenikhina	
Education about Artificial Intelligence Technologies: Attitudes and Practices of School Librarians in Croatia	597
M. Duic	
Introduction of the Course "Television and Radio Systems" at the Professional Graduate Study Program	603
S. Kunic, B. Kotarski, P. Drazic, M. Sokele	
Programming with Hedy for Indonesian Junior High Schools	607
M. Ayub, O. Karnalim, H. Toba, M.C. Wijanto	

Adaptation and Validation of a Questionnaire on Perceived Benefits and Risks of Children's Internet Use	613
T. Velki, M. Miocic	
Familiarity with AI and Its Use in Programme Production by Croatia's Most Listened-to Radio Stations	619
M. Galic, A. Sulentic, I. Rosanda-Zigo	
Micro:Bit Smart AI Lens Extension for Teaching AI	625
P. Vostinar	
Graduates Insights: Development of Digital and Computational Competences in Physics and Mathematics Study Programs at University of Maribor	631
R. Repnik, P. Cajnko, E. Klemencic, D. Osrajnik	
Impact of Digital Educational Content: A Case Study from Primary School	638
G. Hajdin, D. Plantak Vukovac, D. Remenar	
Online Teaching During the COVID-19 Crisis - Teachers' Attitudes and Practices	645
K. Pavlina, A. Pongrac Pavlina, A. Modrusan	
Identifying Key Indicators and Analyzing the Impact of Digital Technologies in Education	650
T. Ivanova, K. Rasheva-Yordanova, D. Borissova, S. Stoev	
A Robotic Fitness Coach for Children	656
V. Hristovska, N. Koceska, S. Koceski	
Cybersecurity in Education: The Challenge of Social Engineering and Information Literacy	662
M. Banek Zorica, G. Golubic, T. Sijakovic Katarincek	
Evaluation of Lesson Plan Generated by ChatGPT 4.0: Focus Group	668
A. Glavas, A. Stascik, R. Jukic	
Artificial Intelligence in Information Technology Higher Education Process	674
M. Konecki, J.J. Antolos, M. Konecki	
Eye Tracking And Assessment Of Language Pragmatics in Children with Autism Spectrum Disorder	678
D. Tuparova, M. Stankova, P. Mihova, G. Tuparov	
Attitudes of Primary School Teachers Towards the Use of Digital Media in the Classroom	683
P. Pejic Papak, J. Mezak, L. Rasek	
Design and Development of Educational Technology for K–12 AI Education in the Classroom: A Child Rights Based Approach	687
N. Pope, M. Sormunen, E. Silvennoinen, M. Tedre	

STEAM Activities Bridging Programming and Music	693
L. Snajder, J. Gunis	
Slovify - An App for Initial Slovenian Language Learning for Immigrants from Croatian-Speaking Backgrounds	698
M.M. Kodba, A. Kozmus, M. Zemljak Jontes	
Trends of Using AI Services Between Students of Educational Study Programs at the University of Maribor	704
M. Krasna, T. Bratina	
The Impact of Digital Media on the Development of Students' Mathematical Literacy: Service-Learning Opportunities	709
I.V. Shyshenko, Y.O. Chkana, O.V. Martynenko, O.M. Udovychenko, I.M. Udovychenko, O.V. Semenikhina	
The Use of the Gen AI Tool Brisk Teaching in the Educational Process and Its Impact on Student Motivation	715
F. Borovic, M. Kovacic, K. Aleksic Maslac	
Open-source CAD Modelling For Educational Applications of Visually Impaired Individuals	720
S. Maricic, A. Baksaj, B. Martincic, J. Milkovic	
Unravelling the Impact of Computer Literacy in EFL Education	724
D. Pesut, J. Djuric	
Toward AI Evaluation of Student Essays	729
P. Rantanen, M. Saari, U.-T. Virta, P. Abrahamsson	
Partnership Pedagogy and the Pygmalion Effect in the Digital Learning Environment	735
Y. Rudenko, M. Drushlyak, V. Shamonina, Y. Diemientiev, O.V. Semenikhina	
Artificial Intelligence in Mathematics Education: Quantitative Analysis of Publication Activity	741
A.O. Yurchenko, Y. Khvorostina, S. Ahadzhanova, K. Ahadzhanov-Honsales, S. Bohoslavskyi, O.V. Semenikhina	
ChatGPT in Native Language Teaching: Local Ukrainian Experience	747
N. Hrona, O. Semenog, I. Kharchenko, M. Ostroha, R. Momot, O.V. Semenikhina	
Illustration in Education with a Focus on Reducing Cognitive Strain	753
T. Nikolova, A. Staneva, K. Rasheva-Yordanova, S. Toleva-Stoimenova, D. Stanev	
Fostering Equitable and Inclusive Online IT Education: Insights from the CodeIn Project	759
F. Urem, A. Udovicic, D. Jurekovic	

Teaching Algorithmization through the Creation of Android Applications in a Visual Development Environment	764
N. Dehtiarova, M. Medvedieva, M. Zakharevych, V. Kibalenko, V. Myhal, M. Pronikova	
Promoting Digital Data Literacy in Primary Education: First Lessons from the DIRECTORS Project	770
A. Kuvezdic Divjak, F. Welle Donker, I. Bosnic, B. van Loenen	
 Cyber and Information Security 	
Analysis of the Content of ChatGPT’s Memory: Types of Information, Security Implications, and User Perception	776
N. Sadat, N. Caporusso, M.H. Doan, V. Ghimire, B. Dhungana, J. Shrestha Lama	
Cyber Incident Landscape and Profiling: Exploring Patterns, Motives, and Impacts through EuRepoC Dana	782
J. Pivar, D. Susa Vugec	
Survey of Open Source Technologies for Building Cyber Ranges for Exercises and Trainings	788
I. Kovacevic, F. Katulic, M. Mamut, S. Gros	
Model-Enhanced Control for Cyber-Physical Security: Simulation of Model-Based Navigation of an Environment-Coupled Watercraft Under Disrupted Global Positioning Conditions	794
A. Udal, J. Kaugerand, I. Astrov, H. Molder, K. Koit	
Operational Technology Sandbox Environment for Malware Detection	800
I. Cindric, M. Jurcevic, T. Hadjina	
Penetration Testing Roadmap for NIS2 Compliance in SMEs	806
I. Tomicic	
AWS and Cloud Data Center Security: Challenges and Mitigation Strategies	813
G. Ajvazi, J. Ajdari, X. Zenuni	
Intrusion Detection System for Internet of Things Using Image Classification	819
M. Korium, J.M. Moualeu, M. Ullah, A. Narayanan, P.H.J. Nardelli	
Learning Digital Forensics through the Development of a Forensic Image Dataset and a Web Portal	825
D. Tulicic, P. Grd, I. Tomicic	
Enhancing Digital Forensics through Machine Learning Algorithms for Detecting Illicit Bitcoin Transactions in Blockchain Analysis	831
M. Dragosevic, D. Topolcic, K. Hausknecht, D. Delija	

Future Trends in AI for Cybersecurity and Digital Forensics: A Systematic Literature Survey N. Nelufule	837
The Impact of Human Aspects of Information and Cyber Security: A Systematic Literature Survey N. Nelufule	843
Anonymizing Driver and Motor Vehicle Records for Secure Analysis M. Li, X. Ye, S. Manoharan	849
Post-Quantum Cryptography in Secure Instant Messaging Protocols K. Boras	855
 Telecommunications & Information 	
Towards Predictive Topology Management in Service-Oriented 6G Networks Z. Ennaceur, I. Brasileiro, A. Jukan, C. Keuker	861
6G Mobile Networks and Dew Computing – Research Trends and Challenges S. Kitanov	867
Parametric Study of the Radiated Field from Base Stations Using the Integral Equation Approach D. Poljak, V. Doric	873
On the Use of Efficient Methods for the Assessment of Radiated Field from Radio Base Station Antennas and Related Legal Issues Pertaining to Human Exposure to Nonionizing Radiation D. Poljak, V. Doric, M. Galic, Z. Novakovic Sesnic	879
Broadband Measurements of Electromagnetic Field Exposure Levels in Indoor and Outdoor Environments D. Berisha, A. Jerliu, M. Ibrani	885
Artificial Intelligence for Hydrogen-Based Energy Systems V. Franki, L. Calcich, A. Viskovic	891
Comparative Analysis of User Experience and Task Performance in Holographic Educational Application M. Kristic, A. Keselj Dilberovic, T. Jagust	897
The Use of 3D Laser Scanning Technology in Crime Scene Investigations S. Stoyanov, S. Letskovska, K. Seymenliyski, R. Simionov, R. Dolchinkov, I-E. Polinchev	902
A Modern Approach to Agriculture: Survey of Agricultural IoT M. Lovrekovic, I. Livaja, M. Pavelic	907

Data Transmission of a ROS-based Autonomous Vehicle over a Private 5G Network	913
T. Uusitalo, M.W.S. Janaka, C. Stubenvoll, A. Karjalainen, T. Tepsa, M. Mielikainen	
SMB over QUIC: A Performance Evaluation	919
O. Mitrovic, V. Tadic	
Space Based Data Centers – Communication Window Length Analysis from an African Perspective	925
A.A. Periola, A.A. Alonge, K.A. Ogudo	
Client-Server Architecture for ERP Systems: A Comparative Analysis of Laravel, Django, and ASP.NET Core	931
S. Miftari, A. Aliu	
 Distributed Computing and Cyber-Physical Systems 	
Evolutionary Computation Algorithms for Task Scheduling in Distributed Computing	937
P. Loncar, P. Loncar	
A Decision-Making Framework for Evaluating Orchestration Systems in Microservices Applications	943
R. Piltaver, A. Janach	
Agentic AI for Dynamic Cloud Resource Management: A Conceptual Framework for Dynamic Cloud Resource Management	949
F. Asani, J. Ajdari, X. Zenuni	
Exploring the Role of Dew Computing in Enhancing Cybersecurity and Digital Forensics: A Systematic Literature Review	955
N. Nelufule	
Performance Trade-offs of High Order Meshless Approximation on Distributed Memory Systems	962
J. Vehovar, M. Rot, G. Kosec	
A Traffic Decision Support System Assisted by Mobile Network Data	968
S. Vojvodic, K. Vidovic, D. Lejak, A. Najev, N. Grubisic	
Parking Lot Availability IoT system Based on ESP8266 Platform	974
A. Cvetkovic, M. Miletic, T. Spoljaric, G. Malcic	
Efficient Time-Series Heart Rate Variability Metrics in C++	978
A. Shekerov, A. Angjelevska, M. Gusev	
Scalability Evaluation of HPC Multi-GPU Training for ECG-based LLMs	984
D. Mileski, N. Petrovski, M. Gusev	

Intelligence Beyond Human Limits: The Evolution and Implications of Machine Cognition	990
D. Miljkovic	
LLM-Enhanced Aircraft Piston Engine Diagnostics with Expert Knowledge Integration	996
D. Miljkovic	
Cost-Effective Smart Socket for Power Monitoring and Remote Control	1002
J. Curic, H. Mlinaric	
 Digital Economy and Digital Society 	
Self-Assessment of Digital Literacy Skills Using Internet Skills Scale (ISS): A Preliminary Report	1007
R. Jurkovic, R. Kopal	
The Chance or The Margin Drives Bookies' Revenue	1013
P. Iliev, D. Todorov	
The Impact of the Presidential Campaign in the USA on the Business Results of the X/Twitter Platform	1020
J. Lozic, K. Fotova Cikovic, I. Lozic	
Research on the Impact of Algorithmic Echo Chambers on Perceptions and Attitudes of Social Network Users in Digital Society	1026
M. Gombar, M. Boban	
The Role of Proof-of-Work in Transaction Integrity and System Resilience in Decentralized Finance Systems: An Overview	1034
A. Stojanovic, M. Alic, B. Cafuta	
Online Consumer Profile and Intergenerational Comparison in the Republic of Croatia	1040
D. Turkalj, I. Kelic, L. Zivkovic	
Transforming Maritime Transport in Croatia through Hydrogen Technologies: Economic Potentials and Critical Perspectives	1046
G. Miscevic, A. Peric Hadzic, S. Aksentijevic	
At the Crossroads of Sustainability and Digital Transformation: Exploring Synergies and Challenges in Global Development	1052
L. Hrustek, E. Krhac Andrasec, M. Tomicic Furjan	
Applications of Artificial Intelligence in Library Activities	1058
L. Lozev, Y. Hadzhiyska, K. Rasheva-Yordanova, A. Lozeva	

Application of Machine Learning in Analyzing the Impact of Organizational Culture on Employee Satisfaction: Predictive Model	1064
I. Fosic, D. Pekanov, I. Fosic	
Measuring the Readiness of Public Policies For E-Inclusion of the 54+ Population with a Composite Index - the Croatian Counties Case	1070
R. Zdjelar, N. Zajdela Hrustek, N. Persi	
A Triple Approach to Initiating Digital Transformation: Insights through Metamodeling	1076
A. Kutnjak	
Taxation of Robots	1082
Z. Sinkovic, L. Pribisalic	
Cybersecurity Challenges in Open Data and AI Systems for Sustainable Local Development	1088
J. Gronman, T. Pohjola, T. Haukioja	
Digital Transformation and Business Decision Making for Sustainability in E-Learning Management	1094
D. Borissova, M. Bankovska, Z. Dimitrova	
A Concise Analytical Review of Digital Image Processing Methods Used to Provide Security	1100
I. Kostadinova, K. Rasheva-Yordanova, M. Bankovska	
Anxious to Create? Role of Gen Z Social Media Usage in Their Creative Self-Concept	1106
N. Kaurin Knezevic, L. Kondic, E. Shushka	
Age and the Digital Divide in the 21st Century: Patterns of Internet Use Across Generations	1111
M. Pejic Bach, J. Zoroja, I. Miloloza	
AI-Enhanced Exam Preparation: Addressing Economic and Sustainability Challenges in Digital Transformation	1117
J. Samardzija	
Reducing Costs and Improving Customer Satisfaction in Insurance Using AI	1123
A. Cerimagic Hasibovic, M. Hasic, A. Tanovic	
Evaluation of the Current Process of Inspection Supervision (AS-IS) and Recommendations for the Future (TO-BE) Model in Croatia	1129
K. Marsic, A. Hunjet	
What Sells: A Study of the Player Spending Habits and the Game Industry Monetization Models	1135
C. Barnes, J. Kasurinen	

Artificial Intelligence in Higher Education: A Global Analysis of AI-Focused Educational Programs	1141
L. Zekanovic-Korona, J. Grzunov, M. Grzunov	
The Impact of Digitalization on the Workforce, Productivity and Efficiency of Companies	1147
V. Vinsalek Stipic, M. Vicic, A. Martinovic	
Digitalisation of Public Services Using the Example of Health Care in the Republic of Croatia	1153
L. Petrovic, V. Vinsalek Stipic, D. Jurkovic	
Optimizing the Research Process: The Role of AI Tools in Scientific Literature Searches	1159
A. Mandic	
The Role of Data Catalog in Advancing Data Monetization Strategy	1164
S. Rosandic	
 Data Science and Biomedical Engineering 	
Issues with Accurate Boundary Representation in Oversampled Meshless Methods	1170
G. Golob, M. Rot, G. Kosec	
A Numerical Study of Combining RBF Interpolation and Finite Differences to Approximate Differential Operators	1177
A. Rogan, A. Kolar-Pozun, G. Kosec	
Fluid Velocity Optimization in a Computational Lab-on-Chip Model for Cellular Analysis	1183
N. Malivuk, A. Ilic, I. Putnik, L. Milic, B. Petrovic, S. Kojic	
In Silico Optimization of Scaffolds for Skeletal Muscle Tissue Engineering	1189
A. Ilic, N. Malivuk, L. Milic, F. Mrkic, B. Petrovic, S. Kojic	
Structured Overview of the Similarity Metrics Commonly Used in 3D Skeleton-Based Re-Identification Studies	1195
D. Katovic, T. Bronzin, D. Adamec, B. Prole, A. Stipic, M. Horvat	
Accelerating Sheath Particle-in-Cell Simulations with StarPU	1200
I. Vasileska, P. Tomsic, L. Kos	
Improving Transparency and Accessibility in the Academic Publication Process on EBSI Network	1206
V. Bojovic, B. Kolarek, D. Davidovic, Z. Sojat, K. Skala	

Prediction of Wind Direction Variability in Dynamic Thermal Rating with Decision Trees	1211
N. Mlinaric Hribar, A. Rashkovska Koceva, G. Kosec	
Predictive Modeling of Correlation And Volatility in Multivariate Financial Time Series	1217
F. Aleksic, M. Papak, S. Begusic	
Improving Surface Soil Moisture Estimation with Distributed Deep Learning and HPC	1222
T. Curtis, M. Riedel, H. Neukirchen, J.S. Busch, C. Montzka, M. Aach, R. Hassanian, C.S. Barakat	
In Vitro Visualization of Bacterial Colonies by Optical Coherence Tomography	1228
A. Robek, J. Stergar, M. Modic, C. Keber, T. Tomanic, I. Stajduhar, M. Milanic	
Currency Matrices for the Visual Analysis of Currency Correlations	1233
M. Burch, M. Barbosa, M. Schmid	
Analyzing Player Types in Football	N/A
M. Burch, S. Dannehl	
Enhancing Interpretability in Retinal OCT Analysis Using Grad-CAM: A Study on the AROI Dataset	1245
M. Melinscak	
Gene Age Prediction is Robust to False Homology	1251
A. Ribaric, T. Domazet-Loso, M. Domazet-Loso	
Accelerating Marker Gene Selection in scrna-seq	1257
B. Borozan, L. Borozan, T. Prusina, J. Maltar, D. Matijevic, S. Canzar	
Bridging Gaps in Ligand Binding Affinity Prediction: Empirical Machine Learning Analyses	1263
F. Fetaji, S. Gievska, K. Trivodaliev	
Graph and Convolutional Methods for Advancing Ligand Binding Affinity Modeling in Drug Research	1270
F. Fetaji, S. Gievska, S. Kalajdziski	
A Data Science Perspective for the Effective Selective Breeding Process to Produce Striking Behavioral Differences Between Two Rat Substrains During Several Generations	1276
O. Czibalmos, G. Korosi, G. Kekesi, G. Horvath	
Non-Destructive Phenotyping of Duckweed Using Segment Anything Model	1281
L.J. Puslar, U. Putar, J. Novak, F. Strnisa, G. Kalcikova, M. Depolli	
Super-Resolution of DermaMNIST Images Using Deep Learning Models	1287
M. Kapo, E. Buza, A. Akagic	

Leveraging Vision Transformers with Hyperparameter Optimization for the Classification of Acute Respiratory Distress Syndrome	1293
J.S. Busch, C.S. Barakat, T. Pauli, S. Fonck, A. Stollenwerk, S.J. Fritsch, M. Riedel	
Analog Front End for Capacitive Electrodes in Biomedical Applications	1299
A. Stanesic, L. Klaic, D. Cindric, M. Cifrek	
Optimized Synthesis of 12-Lead ECG from Bipolar Torso Leads	1303
I. Tomasic, N. Tomasic	
Preliminary Results on Automated Binary Classification of Congenital Heart Defects in Fetal Ultrasound Images Using Deep Learning Algorithm	1310
K. Caleta, A. Sarcevic, J. Bozek, M. Horvat, I. Zmijanovic	
Improving Atrial Fibrillation Detection with Machine Learning Models	1316
S. Tudjarski, M. Gusev, A. Madevska Bogdanova, A. Stankovski	
Hybrid Deep Learning Architectures for Multi-Modal AI-Driven Breast Cancer Detection: A Comparative Analysis of Computational Efficiency and Diagnostic Accuracy	1322
E. Dupljak, E. Domazet	
 Engineering Education	
Senior Coding Framework for Enhancing Python Skills in Students Aged 13–16	1329
A. Sahni, A.A. Simiscuka, B. ORiordan, J. Booth, D. Mothersill, A. Hargreaves, K. Darmody, J. Bleach, P. Stynes	
Integrating Engineering Principles in Data Literacy Workshops for Primary Education	1335
I. Bosnic, A. Kuvezdic Divjak, F. Welle Donker, B. van Loenen	
Exploring Optimization Algorithms through a Game-Based Learning Approach	1341
B. Crnkovic, M. Holenko Dlab, V. Mikulic Crnkovic, I. Traunkar	
Exploring Primary School Computer Science Teachers' Perceptions of the Metaverse	1347
M. Zunic, M. Holenko Dlab, K. Stancin	
From STEM to STEAM: Enhancing the Engineering Education Experience	1352
G.J. Collins	
Generative AI as a Technology to Support Hearing-Impaired Students in Inclusive Programs of a Technical University	1358
O.A. Oreshkina, Y.A. Safonova	
Application of Factor Analysis in Determining the Dimensions of the Public Relations Model in Croatian Higher Education Institutions	1364
P. Kuhar	

Blueprint of Integrity: Continuing Ethics Education in Engineering I.G. Martinez, R.P. Martinez	1370
An Experience in Using Library's Service in Distributing Self-learning Analog Discovery Kits S. Pumrin, S. Sangwongwanich, P. Deachapok, N. Neamsang, S. Phongtongjalearn, T. Singhanart, K. Maneeratana	1376
Stress Monitoring During University Exam Period Using Smartwatches I. Brcic, J. Alajbeg, L. Marincic, A. Sovic Krzic	1382
Prevalence and Correlates of Impostor Syndrome Among Computer and Electrical Engineering Students M. Krajacic, J. Petrovic, V. Putarek	1387
Integrating ICT into Precision Agriculture Education: Insights from the IPA Summer School B. Zaloznik, P. Bernad, E. Rihter, J. Rakun	1392
Informal Education for High-Performance Computing and Cross-National Collaboration with National Competence Centers and Centers of Excellence P. Tomsic, D. Harish, I. Vasileska	1397
A First Analysis of Students' Feedback to an EduScrum-Based Course in a Computer Science Master's Program C. Andersson, G. Kroisandy	1403
Positive Education and Project-Based Learning: Exploring Competency Development in Engineering Students N.V.C. de Vasconcelos, M.C.C. Pontarolo	1409
Drama Techniques Reduce Public Speaking Class Anxiety Among Science Undergraduates P. Koulouri, A. Miari, A. Daneli, P. Nicolaidis, I. Leonardos, L.-V. Andreou	1415
Lifelong Learning in the Energy Transition: Implementation of Wireless Power Transfer M. Mohammadali Mazlaghani, D.C. Zuidervliet, P.J. van Duijsen	1420
Generative Artificial Intelligence: A Tool to Bridge Gender Gaps in STEM Careers P. Matarrodona Moragas, R. Balta-Salvador, M. Pena	1426
Improving Cognitive Skills with a Multi-Agent DQN: A MATLAB Implementation A. Dimitrova, P.V. Georgieva	1431
Assessing Personalized Engineering Learning Experience with a Multi-Modal AI Tutoring Framework B. Fetaji, M. Fetaji, G. Armenski, F. Fetaji	1437

Assessing STEM Initiatives for Malaysian Secondary Schools: A Case Study on Basics of Sustainability (BoS) 1443
S.T. Chong, I.M. Hanika, K.S. Loh, A.Z. Abd Rahman, E.E.L. Yeap, H. Harwati

Exploring the Role of Large Language Models in Advancing Student Assessment in Database Courses 1448
E. Tuparova, D. Tuparova, G. Tuparov

Fostering a Responsible Attitude towards Intellectual Property and Copyright Among Participants of the Discussion Club 1454
N. Dehtiarova, O. Zhmud, O. Boriak, D. Dehtiarova

Human-Computer Interaction

Revolutionizing Competency Assessment: The Role of Digital Behavioral Biometrics 1459
J. Valacich, P. Weisgarber, J. Jenkins, D. Wilson, D. Kim

A Web-Based Card Game Simulation for Optimal Strategy Development 1465
L. Zuzic, J. Lerga

Redefining the Translation Profession: The Impact of Artificial Intelligence 1471
M. Brkic Bakaric

Algorithmic Echo Chambers and User Interaction in Understanding the Societal Impact of Personalized Content 1477
M. Gombar

Exploring Interface Design for Energy Data Visualization: A Usability Testing Workshop 1484
M. Qureshi, A. Knutas, A. Wolff

GenAI in DevOps: Boon or a Bane 1490
H.J. Kam, A. Hemon-Hildgen

Field-Tested: Usability Insights from a Mobile VSEE Application 1495
T. Hynninen

AI as Synthetic Users in Human-Centred Design: A Systematic Review 1500
F. Pehar

Visualizing the Dynamics of the KAB Model with Sankey Diagrams 1510
M.H. Doan, N. Caporusso

The Effects of Information Load and Brand Familiarity on Visual Attention Strategies and Smartphone Product Preferences 1516
R. Love, A. Price, D. Bacic

Gendered Endorsers' Impact on Consumers' Subconscious Visual Attention Using Eye-Tracking	1522
A. Skinner, E. Kallmeyer, P. Gutierrez, D. Bacic	
A Qualitative Study of Sensemaking Through Data Exploration	1528
N. Tylosky, A. Knutas, A. Wolff	
A Bibliometric Analysis of Artificial Intelligence in Human-Computer Interaction: Insights from Core Web of Science Literature	1534
D. Cistic, S. Drezgic, S. Cegar	
Unveiling the Impact of Subtitles: Insights into Recall and Viewer Visual Engagement on Streaming Video Content	1540
K. Walker, A. Lezic, D. Bacic	
Usability and User Experience Evaluation of a Multiplatform House Design Pipeline: Navigating Web, AR, and Mobile VR Workflows	1546
S. Vlahovic, M. Moslavac, K. Misura, L. Boban, A. Jovic, M. Suznjevic	
Exploring Emotional Changes Before and After Electronic Sports Participation in Older Persons Using Facial Expression Analysis	1552
Y. Lin, J. Xu, S. Hachisuka, T. Sasano, B.-K. Son	
Flights and Airports -A Visual Analytics Perspective	1558
M. Burch, A. Kuriger, F. Pehar, B. Bekavac	
Short-Form Videos: An Exploratory Study on the Impact of Subtitles and ASMR Split-Screen Format Options Using Eyegaze and Facial Expression	1564
N. Pascale, O. Tinawi, J.V. Moraes Barreto, A. Aldaas, D. Bacic	
Interruptions or Assistance: The Impact of Mobile Notifications	1570
N. Lekaj, T. Orehovacki	
Visualizing Children's Filter Bubbles: A Digital Window for Bridging Social Media Experiences	1576
L. Bekavac, L. Bekavac, B. Bekavac	
Translating FlexSim Models into Virtual Reality Environments	1582
L. Liker, D. Bacnar, D. Baric, M. Jardas	
Digital Dementia: A Case Study of High School Students	1587
K. Jurina, T. Prelec	
Exploring the Quality Characteristics of Peaches through Data Visualization	1592
L. Nacinovic Prskalo, J. Stojkovic, D. Ljubobratovic	

Information and Communication Technology Law

Tort Rules and Regulatory Sandboxes: The Influence of the National Jurisdictions G.M. Riccio	1598
Jurisdiction in the Digital Age with the Focus on Quantum Computing V. Rekrutiak	1604
NFTs as Negotiable Instruments: Croatian and EU Perspectives M. Hren	1610
Payment Tokens In The Succession Law M. Stilinovic	1616
Legal Challenges of Confidentiality and Publicity in the View of Information Security in Hungary T. Szadeczky, G.L. Szoke	1622
Patient Asks to AI: Is There Anybody There? Patient-Centered AI Approach and Human Oversight S.S. Yilmaz	1628
Certification of the EU Digital Identity Wallets and Its Challenges in the Era of AI P. Loutocky, V. Stupka, F. Kasl	1636
Implementation of Regulation (EU) 2024/1183 in Higher Education in the Republic of Croatia M. Milenkovic, G. Vojkovic	1642
Challenges of Implementing Fully Autonomous Trams in the City of Zagreb - From the Passenger Perspective M. Milenkovic, L. Pacek, E. Rozic	1648
The Use of AI in Healthcare: Students' Opinions on Ethical Considerations, Legal Consequences, and Future Implications K. Solic, I. Juric, B. Herceg Paksic	1654
EXPLOITED ONLINE: Sending Self-Generated Sexual Material and Sextortion of Children in Croatia and Serbia T. Ramljak, L. Vejmelka, R. Matkovic, M. Rajter	1659
The Role Artificial Intelligence Technology in Reducing Social Complexity M. Klaric	1663

Microelectronics, Electronics and Electronic Technology

A Novel Design Variation of a Monolithically Integrated SiC Circuit Breaker A. Hartmann, N. Boettcher	1669
600 °C Operation of a LDMOS Integrated on the 4H-SiC CMOS Platform R. Kammel, J.F. Dick, A. May, M. Rommel, J. Schulze	1674
Empirical Modelling of Tunneling Processes in 4H-SiC Gated Pin-Diodes B. Schwemmer, J.F. Dick, A. May, J. Schulze	1680
Electroluminescent Behavior of Defects in 4H-SiC Light Emitting Diodes S. Ultsch, J.F. Dick, J. Schwarz, J. Schulze	1685
Fabrication and Electrical Characterization of Pure Boron on 4H-SiC Junctions J. Wimmer, J.F. Dick, J. Schulze	1691
Modeling of Silicon Bipolar Transistor's Current Gain at Cryogenic Temperatures down to 40 K A. Tabakovic, F. Bogdanovic, L. Markovic, J. Zilak, M. Koricic, T. Suligoj	1697
Estimation of Single-Diode Model Parameters of Photovoltaic Panels Using Four Points on the I – V Curve A. Aksamovic, S. Odzak	1703
Impact of AlGaN and InAlN Barrier Layer Materials on Double-Heterostructure GaN HEMT's Conduction Properties M. Marusic, D. Novakovic, I. Berdalovic, T. Suligoj	1708
Resistivity Modeling of Copper Nanowires With Sub-100 nm Diameter M. Matic, A. Miljavac, V. Sharma, M. Poljak	1714
Electronic Properties and Ballistic Transport in the 1D van der Waals Material Si₂Br₄ T. Vukadin, M. Matic, M. Poljak	1720
Probing the Design Space of InSb Topological Superconductor Nanowires for the Realization of Majorana Zero Modes M. Poljak	1725
Design and Analysis of Power Supply Input EMC/EMI Filter for Automotive Electronic Control Units K. Solaja, R. Blecic, A. Broznic	1730
Characterization of Microstrip Resonator for EM Immunity Measurements A. Krizanic, M. Magerl, T. Mandic, A. Baric	1734

Biomimetic Breathable Surfaces for Triboelectric Nanogenerator for Energy Harvesting	1739
A. Barua, V. Sharma	
High Spectral Purity Sinusoidal Voltage Signal Source for Neuromodal in the Frequency Range from 1 Hz to 500 kHz	1744
I. Budic, T. Markovic	
Comparison between NRZ, PAM-3, PAM-4 and Duobinary Modulation in High-Speed Serial Interfaces	1750
A. Cortiula, M. Danelutti, D. Menin, A. Bandiziol, F. Driussi, P. Palestri	
Spectrally Efficient UWB Pulse Shaping Based on Sharpening of Polynomially Weighted Gaussian Pulses	1756
A. Milos, G. Molnar, M. Vucic	
Reducing Mechanical Stress Sensitivity of Integrated Circuits through Component Rotation in Layout	1762
A. Zamboki, L. Gocan, J. Mikulic, G. Schatzberger, T. Mandic, A. Baric	
Signal Conditioning Circuit for CMOS-Based Wheatstone Bridge Stress Sensors	1768
L. Gocan, A. Zamboki, J. Mikulic, G. Schatzberger, T. Mandic, A. Baric	
Architectural and Post-Silicon Evaluation of RISC-V vs. Cortex-M0+ SoCs	1773
J. Kundrata, A. Baric	
Effects of Calibration and De-embedding on Material Parameter Extraction Using Coaxial Airline	1779
B. Pejcinovic, H. Tran, A. Ramachandran, K.G.R. Thompson, R. Doneker	
Design of a High-Gain Biconvex Non-Spherical Lens Antenna for Millimeter-Wave Communication Applications	1785
C. Zhang, H. Wu, F. Qi, J. Bao	
Experimental Millimeter-Wave Radar Image Analysis for Ice Detection in Low-Temperature Environments	1789
W. Zhang, H. Wu, F. Qi, J. Bao	
Application of a Calibration Technique for Broadband Dielectric Characterization Using a Narrowband Microwave Resonator Sensor	1792
M. Chavoshi, M. Martinic, G.A.E. Vandenbosch, B. Nauwelaers, T. Markovic, D. Schreurs	
Improving NMR Sensitivity with a Predictive Noise Modeling Calculator	1797
P. Kolar, L. Blazok, D. Bojanjac	

Optoelectronics and Photonics

- Monolithically Integrated Switchable Optical Receiver for Classical and Quantum Communication** 1803
D. Milovancev
- Phosphorescent Markers for Visible Light Sensing Put Into Practice** 1808
A.P. Weiss, G.J. Mohr, A. Kropfl, C. Krutzler
- Measurement of Wall Thickness in Heat Exchanger Tubes by Simultaneous Use of Low-and High-Coherence Fiber-Optic Interferometry** 1813
M. Tomic, A. Gavrilovic-Wohlmuther, Z. Djinovic
- Towards Spectral Data Reduction in Paprika Powder Adulteration Detection** 1819
J. Jankovic, I. Ursa, J. Loncar, J. Vukovic, M. Sprem, I. Skokic, M. Spanovic, M. Oric, V. Galic, F. Novoselnik, D. Babic
- Smart PV Power Inverter for Emerging Solar Technologies: Case Study Perovskite Solar Cells** 1824
S. Sladic, M. De Santis, E. Zivic, W. Giernacki

Project Management

- From Methodology and Tools to AI: Insights into IT Project Management Practices in Croatia** 1829
K. Pazur Anicic, V. Buselic
- The Role of Causal Relationships in Critical Success Factors Models for Software Projects** 1835
Z. Mitrovic, D. Petrovic, M. Mihic
- Technology Transfer Projects Management at Regional Level** 1841
V. Omelyanenko, O. Omelianenko, G. Pawlowski, A. Artiukhov, S. Lytvynenko
- Analyzing Topic Dynamics, Sentiments, and Semantic Coherence in Reddit Discussions on Agile and Digital Transformation** 1845
F. Hidri, B. Abazi Chaushi, G. Tigno
- From Innovation to Impact: Case Studies of EDIH Adria TBI Projects** 1851
I. Lorencin, G. Krcelic, L. Blaskovic, A. Zuzic, J.T. Licardo, S. Babic, D. Etinger, N. Tankovic
- Digital Maturity of Private and Public Organizations in RH** 1857
G. Krcelic, I. Lorencin, N. Tankovic
- Exploring Stakeholders' Perspectives on the Impact of Generative AI on IT Project Management Roles** 1862
B. Kardum, Z. Car

The Implications of use of AI and Geo/Spatial Technologies in Data Harvesting for Sustainability Reporting on Corporate and Project Level M. Bajica	1868
---	-------------

Smart Industries and Digital Ecosystems

Interoperability as an Enabler for Digital Twin Based Decision Making in Smart Agriculture M. Ilic, M. Tosic, A. Tomcic	1875
---	-------------

Empowering Industrial Development through the Smart City Paradigm V. Omelyanenko, I. Pidorycheva, Y. Revtiuk, O. Omelianenko, V. Voronenko	1881
--	-------------

Smart Audit and Monitoring of Transmission Towers (SAMST) M. Maric, D. Maric, A. Gualandi	1885
---	-------------

Addressing Cybersecurity in Aggregator-Based Smart Grid Control Architecture H. Keserica, S. Sucic, T. Hadjina	1892
--	-------------

Securing Heterogeneous Computing Architectures in Self-Driving Cars: Isolation, Inter-Processor Communication, and Threat Mitigation S. Nesimi, E. Domazet	1898
--	-------------

A Brief Review of Potential Benefits of Integrating Solar Energy into Future Smart City Parking Systems Z. Kljaic, D. Pavkovic, M. Kristic, B. Antolovic, E. Briski	1903
---	-------------

Software and Systems Engineering

An Insight into the Impact Of Generative Artificial Intelligence Tools on Software Development Practices I. Urek, K. Aleksic Maslac, A. Budin	1909
---	-------------

Towards Enabling Privacy-First AI Solutions for SMEs Using Open-Source LLMs T. Hynninen, S. Maunula	1915
---	-------------

The Role of Artificial Intelligence in Transforming Tourism: Enhancing Personalization, Engagement, and Sustainability E. Leka, A. Aliti, L. Lamani, E. Hoxha	1920
---	-------------

Application of Large Language Models for Enhancing Bug Reporting Activities T. Nikolova, S. Toleva-Stoimenova	1928
---	-------------

Systematic Literature Review on Automatic Anomaly Detection Based on Database Logs A. Dreshaj, M. Hamiti, Z. Hasani, N. Besimi, J. Ajdari	1933
---	-------------

A Framework for AI-Powered Neutralization of Environmental Interferences in Measurement Processes	1938
M. Mijac, D. Oreski, L. Posaric	
A Preliminary Study of the Structural Dynamics of Open Source Software	1944
M. Burch, S. Mettler	
A Comparative Study of Static Program Slicing Tools for C	1950
G. Spaits, K. Umann, Z. Porkolab	
Comparison of Java Virtual and Non-Virtual Threads in Parallel Programming	1956
Z. Sirotic, S. Sovilj, M. Orsulic, K. Pripuzic	
A Comparison of UIKit and SwiftUI in iOS Development	1962
M. Kovacs, K.M. Bolla	
A Survey of CoAP Congestion Control in the Context of 6TiSCH Networks for Real-Time Applications	1968
D. Fonovic	
Efficient Container Image Distribution for Multi-Tenant Kubernetes Clusters	1973
D. Sindicic, N. Momcilovic	
Flexible User Management and Access Control in Multitenant Microservice Systems	1979
J. Benjak, F. Tisljar, M. Saric, N. Miljancic	
Vehicle Trajectory Filtering Based on Optimal Control and Simulator-Based Reconstruction	1985
V. Diklic, I. Markovic	
Designing a Tailored ERP System with Localized Architecture for North Macedonian Enterprises	1991
S. Miftari, A. Aliu	
Analysis of Event-Driven Service Interactions: Choreography versus Orchestration Approach	1997
J. Matkovic	
Comparison of Digital Technologies Deployed in The Preservation of Selected Cultural Heritage: Analysis of Accuracy, Quality and Effectiveness	2003
P. Kudela, M. Fandakova, M. Jakubec, M. Placak	
An Overview of the Online Room Booking System for Higher Education Institutions	2009
I. Zakarija, T. Besjedica, M. Lazo, R. Senjo	
Application of the Command Query Responsibility Segregation Design Pattern in the Information Systems of Croatian State Administration Bodies	2015
K. Kavran, I. Rakaric	

Caching in Information Systems Based on Command Query Responsibility Segregation Design Pattern 2021
K. Kavran, I. Rakaric

Eventing in Information Systems Based on Command Query Responsibility Segregation Design Pattern 2027
K. Kavran, I. Rakaric

MIPRO Junior - Student Papers

Determination the Temperature Class for Explosion Proof Equipment 2033
T. Alajbeg, J. Ecimovic, M. Sokele, M. Mackovic

Preliminary Study on the Difference of Web Services Load Balancing Performance in Theory and Practice 2039
E. Staric, N. Tankovic

Decarbonization through Hybrid Energy Systems 2044
E. Mirkovic, V. Kirincic, R. Prenc, M. Rojnic

The Role of Hydroelectric Power Plants in Power System Stabilization 2050
M. Tomasevic, V. Zuppa Baksa, T. Tolnauer Ackermann

Economic Aspects of Electricity Production in Wind Power Plants 2054
K. Besenic, V. Zuppa Baksa, A. Bednjanec

Development of the Device And Mobile Application For Collecting, Analyzing and Displaying Vehicle Diagnostic Dana 2058
I. Crnjak, M. Sokele, G. Vujisic

Modelling of Permanent Magnet Generators Using the Finite Element Method (FEM) 2063
A. Vedris, B. Tomicic, D. Sente

An Analysis of the Performance of .hr Domain Homepages Using the Google Lighthouse Tool 2068
T. Jakopec, S. Kroflin

Comparison of MSP-EXP432P401R Program Performances by Using Different Development Environments 2073
A. Hasanovic, D. Pozderac, E. Cogo, E. Cogo, I. Besic

Evaluation of The Usability of Analog Joystick Movement in MSP-EXP432P401R Snake Game 2077
D. Svraka, A. Ali Al Zayat, E. Cogo, E. Cogo, I. Besic

IoT-Based Braille Alphabet Input and Translator System 2082
E. Smajic, E. Cogo, E. Cogo, I. Besic

Contribution to Human Respiratory System Modelling Using Electrical Networks D. Radosevic, I. Lackovic	2087
Environmental Management in Electrotechnical Products Manufacturing Process V. Imrovic, A. Bednjanec, V. Zuppa Baksa	2093
Analyzing Social Networks of Sport Preferences for Personalized Recommendations R. Turcinovic, G. Mikic, S. Beliga, A. Mestrovic	2097
Sentiment Analysis of Pro-Environmental Behavior using X Data: A Comparative Study of Waste Management in Spain and Macedonia S. Jakjimovski, A. Vlahovski, M. Stojcheva, A. Dedinec, J. Prodanova, F. Liebana Cabanillas, L. Kocarev	2103
Optimizing Java Performance with the Vector API for Data-Parallel Computations V. Pavlovic, K. Siric, B. Mihaljevic, A. Radovan	2109
Evaluating Memory Management and Garbage Collection Algorithms with Virtual Threads in High-Concurrency Java Applications M. Simatovic, H. Markulin, D. Beronic, B. Mihaljevic	2115
IoT-Driven Weather Station for Comprehensive Data Collection F. Alaber, B. Novoselnik	2121
A Comparative Analysis of Artificial Intelligence Methods for Air Quality Prediction on Construction Sites E.Z. Gill, M. Mastromatteo, L. Cangelmi, P. Cellini, D. Cardone, A. Amelio	2127
Reaching Artificial General Intelligence (AGI): Challenges and Opportunities G. Perkovic, A. Drobnjak, I. Boticki	2133
An Overview of Passive Digital Image Tampering Detection Methods J. Kolarec, J. Petrovic	2139
Developing a Child-Friendly Chatbot Using GPT and OpenAI API: A Case Study J. Bernetic, M. Asenbrener Katic, S. Candrljic	2145
DeepCombine: Multimodal Person Recognition S. Trojer, V. Bhateja, P. Peer, Z. Emersic	2151
Exploring the Operational Dynamics and Structural Properties of Croatia's EV Charging Network D. Kerman, S. Barac, D. Sabolic	2155

Bridging Virtual and Physical Robotics: An AI-Driven Educational Platform Using NVIDIA Omniverse Isaac Sim and Jetson Orin Nano	2161
L. Jakic, I. Boticki, A. Sovic Krzic	
Using ChatGPT in Designing Web Applications Resistant to SQL Injection Attacks	2167
H. Markulin, A. Radovan, B. Mihaljevic, K. Bilic	
Security Challenges in Network Communication Caused by the Quic Protocol	2173
K. Josic, S. Papic	