

2025 10th South-East Europe Design Automation, Computer Engineering, Computer Networks and Social Media Conference (SEEDA-CECNSM 2025)

**Patras, Greece
19-21 September 2025**

IEEE Catalog Number:
ISBN:

CFP25SHA-POD
979-8-3315-7103-0



Copyright © 2025, 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:	CFP25SHA-POD
ISBN (Print-On-Demand):	979-8-3315-7103-0
ISBN (Online):	979-8-3315-7102-3

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

AI-Driven Digital Twins in Medical Education: Virtual Avatars for Neurodegenerative Disease Training	1
<i>Konstantinos Sakkas, Niki Eleni Ntagka, Emmanouil D. Oikonomou, Nikolaos Giannakeas Alexandros T. Tzallas, Andreas Miltiadous</i>	
Air Quality Monitoring Systems: A Survey	6
<i>Alexandros Tamlialis, Theodoros Karvounidis, Christos Douligeris</i>	
An Approach for Computing Lower Bounds for Flexible Job-Shop Scheduling Problems	12
<i>Christos Valouxis, Christos Gogos, Dimitrios Kiosses, Aris Magklaras, Panayiotis Alefragis</i>	
Applications of Artificial Intelligence in Consent Management	18
<i>Konstantinos Kiropoulos, Ioannis Mamatsios, Ioannis Zozas, Stamatia Bibi</i>	
A Case Study for Evaluating a Digital Educational Scenario for Kindergarten and Preschoolers	24
<i>Georgia Kiriakaki, Aglaia Psani, Christos Kytagias, Ioannis Yannis Psaromiligkos, Ioannis Salmon</i>	
A LEAP Toward Precision Medicine for Parkinson's Disease	30
<i>Emmanouil D. Oikonomou, Konstantinos Sakkas, Niki Eleni Ntagka, Nikolaos Giannakeas Konstantinos Kalafatakis, Alexandros Bantaloukas-Arjmand, Evripidis Glavas, Alexandros T. Tzallas Andreas Miltiadous</i>	
A Model-Based Approach to Automated Digital Twin Generation in Manufacturing	35
<i>Angelos Alexopoulos, Agorakis Bompotas, Nikitas Rigas Kalogeropoulos, Panagiotis Kechagias Athanasios P. Kalogeras, Christos Alexakos</i>	
A Multi-Method Framework for Early-Stage Routing Congestion Prediction in VLSI Designs	41
<i>George K. Kranas, Kosmas Kariotis, Michael F. Dossis, Antonios N. Dadaliaris</i>	
A Review of Automatic Text Summarization: The Case of Greek Legal Documents	47
<i>Lamprini Pappa, Petros Karvelis, Chrysostomos Stylios</i>	
A Rule-Based System Integrating Case-Based Reasoning for Adaptive User Interfaces in Personalized Educational Software	53
<i>Christos Troussas, Akrivi Krouska, Phivos Mylonas, Cleo Sgouropoulou</i>	
Beyond Container CVE Analysis: A GitOps-Based Attestation and Sandbox Framework for Container Supply Chains	60
<i>Evangelos Syrmos, Panagiotis Radoglou-Grammatikis, Efklidis Katsaros, Jyoti Sekhar Banerjee Anastasia Kazakli, Konstantinos Panitsidis, Vasileios Vitsas, Panagiotis Sarigiannidis</i>	
Comparative Analysis of Emerging Layered Metaverse Architectures	66
<i>Markos Koltsidas, Ioannis Karamitsos, Andreas Kanavos</i>	
Cyber Threat Detection and Mitigation on Social Media Using Large Language Models (LLMs): A Systematic Review	72
<i>Ashwaq Almorjan, Mohammed Basher, Miadah Almasre, Mona Alkhozae</i>	
Depressive Thought Retrieval as a Probabilistic Database Query System	82
<i>Evangelos D. Spyrou, Vassilios Kappatos, Chrysostomos Stylios</i>	

Design and Development of a Virtual Reality System: Application to the Training of Small Vessel Skippers	88
<i>Panagiotis Georgiou, Athanasios Christopoulos, Chrysostomos Stylios</i>	
Design and Evaluation of a Post-Quantum/Traditional Hybrid Scheme for EDHOC	94
<i>Lidia Pocero Fraile, Christos Koulamas, Apostolos P. Fournaris</i>	
Design of a Multimodal Affective Module for Emotion Recognition in Adaptive Language Learning Systems	100
<i>Dionysios Koulouris, Melina Tziomaka, Argyrios Zafeiriou, Kosmas Pinitas, Athanasios Kallipolitis Andreas Menychtas, Ilias Maglogiannis</i>	
Development of Recycled Lightweight Concrete with Intelligent Environmental Monitoring System for Temporary Housing in Vulnerable Regions	106
<i>Marco Jhimy Capcha Vasquez, Christian Edinson Murga Tirado</i>	
Digital Twin-Based A* Path Planning for UGVs in Smart Agriculture	111
<i>Antonios Chatzisavvas, Theodora Sanida, Georgios Ktistakis, Michael Dossis, Minas Dasygenis</i>	
Efficient Service Function Chain Placement in a Multi-Domain 5G Architecture	115
<i>Maria Efthymiopoulou, Apostolos Siokis, Nikolaos Efthymiopoulos, Kostas Ramantas, Christos Verikoukis</i>	
Emotional Engagement in STEM Programming: Micro:Bit and MicroPython vs. Traditional Python in Upper Secondary Education	121
<i>Sofia Kasotaki, Nikos Dimokas</i>	
End-to-End Web-GIS and Computer Vision System Using UAV Imagery for Avian Monitoring and Risk Assessment	127
<i>Dimitrios Mpouziotas, Panagiotis Georgiou, Georgios Pachoulas, Petros Karvelis, Chrysostomos Stylios</i>	
Evaluating a Digital Educational Scenario with Gamification: A Case Study of Vocational Educational Students	133
<i>Aglaia Psani, Georgia Kiriakaki, Christos Kytagias, Ioannis Yannis Psaromiligkos, Ioannis Salmon</i>	
Evaluating Machine Learning Approaches for Residential Property Price Estimation	139
<i>Elias Dritsas, Maria Trigka, Phivos Mylonas</i>	
Evaluating Transparency in Artificial Intelligence Systems with the Z-Inspection® Process for Trustworthy Assessment	145
<i>Giulia Karanxha, Paulinus Ofem</i>	
Evaluation Metrics and Ethical Concerns in the Design of Adaptive AI Chatbots	151
<i>Akrivi Krouska, Christos Troussas, Phivos Mylonas, Ioannis Voyiatzis, Cleo Sgouropoulou</i>	
Expansion of Open Metaverse Educational Framework (OMEF)	157
<i>George Pachoulas, Athanasios Christopoulos, Chrysostomos Stylios</i>	
Fish Species Classification Using Deep Learning: A Comparative Study	163
<i>Vasileios P. Rekkas, Stavros Samaras, Sotirios P. Sotiroudis, Panagiotis Sarigiannidis, Zaharias D. Zaharis Sotirios K. Goudos</i>	
Greek Automatic Text Summarization: From General Language Models to Legal Domain Challenges	167
<i>Panagiota Athanasiou, Petros Karvelis, Chrysostomos Stylios</i>	

Integrating Attention Mechanisms into Convolutional Neural Networks for Image Classification	173
<i>Gerasimos Vonitsanos, Emmanouela-Electra Economopoulou, Spyros Sioutas, Andreas Kanavos Phivos Mylonas</i>	
Leveraging Grey Wolf Optimization Fundamentals for a Learning Design Framework to Proactively Manage the Risk of Student Failure	179
<i>Anastasia Themeli, Dimitrios Kotsifakos, Yannis Psaromiligkos</i>	
Leveraging Large Language Models for Dynamic NPC Interactions in 2D RPGs	185
<i>Iasonas Topalidis, Minas Dasygenis</i>	
Machine Learning Based Solutions for Salt Marsh Monitoring	191
<i>Dimitrios Mitrogiorgos, Petros Karvelis, Alice Stocco, Nikos Koutsias, Chrysostomos Stylios</i>	
Meta-Optimized Risk-Aware Portfolio Management: A Hybrid Deep Reinforcement Learning and LSTM-GRU Ensemble	197
<i>Majid Sorouri, Deniz NoorMohammadzadehMaleki, Arman Salehi, Amirfarhad Farhadi, Azadeh Zamanifar</i>	
Multi-Robot Warehouse Navigation Using Digital Twin Enhanced Intelligence	203
<i>Nikolaos Baras, Antonios Chatzisavvas, Dimitris Ziouzos, Minas Dasygenis</i>	
Personalized Multimodal Signal Processing for Enhanced HCI in AR Environments	207
<i>Phivos Mylonas, Christos Troussas, Akrivi Krouska, Cleo Sgouropoulou</i>	
Photolithography Overlay Errors Simulation Using Zernike Based Aberration Modeling and Intra-Field Variation	212
<i>Aris Magklaras, Panayiotis Alefragis, Christos Gogos, Alexios Birbas</i>	
Secure Chaotic Encryption of Medical Images via Logistic Maps and SHA3-Based Key Generation on Embedded Devices	218
<i>Argyrios Sideris, Theodora Sanida, Maria Vasiliki Sanida, Michael Dossis, Minas Dasygenis</i>	
Simulating Exposed 5G Ports Using a Dockerized Honeypot Framework for Cybersecurity Analysis in a 5G Testbed	222
<i>Dionysia Varvarigou, Kostas Lampropoulos, Spyros Denazis, Paris Kitsos</i>	
Smart Path Planning for UAV Navigation in Apple Orchards Using Digital Twin Validation	228
<i>Antonios Chatzisavvas, Dimitris Ziouzos, Nikolaos Baras, Georgios Papamichail, Minas Dasygenis</i>	
Supervisor Control and Pump Fault Diagnosis Through Flow and Pressure Sensors in a Water Transfer Network	232
<i>Dimitrios G. Fragkoulis, Fotis N. Koumboulis, Maria P. Tzamtzi, Nikolaos D. Kouvakas</i>	
The State of Python-Based FPGA Development: A PyPI Repository Study	238
<i>Kosmas Kariotis, George K. Kranas, George Dimitriou, Michael F. Dossis, Antonios N. Dadaliaris</i>	
Towards Efficient QoS in SDN: A Comprehensive Mapping Study	244
<i>Ioannis Koulouras, Spiridoula V. Margariti, Chrysostomos D. Stylios, Eleftherios Stergiou</i>	
Toward the Development of an Ontology for Supervisory Control and Fault Diagnosis in Water Distribution Networks	250
<i>Maria P. Tzamtzi, Fotis N. Koumboulis, Dimitrios G. Fragkoulis, Nikolaos D. Kouvakas, Klimis Katsiavrias Konstantinos Katsiavrias</i>	

Whale Optimization Algorithm for Training Teachers in Creative Learning Design	258
<i>Kalliopi Rigopouli, Dimitrios Kotsifakos, Yannis Psaromiligkos</i>	
Lessons Learned from Setting Up Kubernetes for Operations on Temporal Graph Neural Networks	264
<i>Fotis Sofoulis, Georgios Drakopoulos, Leonidas Theodorakopoulos, Spyros Sioutas</i>	