

28th Pan-Hellenic Conference on Progress in Computing and Informatics (PCI 2024) with International Participation

Dec 13-15, 2024, Athens, Greece

Department of Informatics & Computer Engineering

University of West Attica, Egaleo Park Campus

<http://pci2024.uniwa.gr/>

Organizers



Greek Computer Society



University of West Attica

Program

Friday, December 13, 2024

	Room1	Room2
11.30-13.00	SMACITE Project Presentation Maria Rigou, Apostolos Gkamas and Ioannis Voyiatzis	
13.00-14.00	Registration	
14.00-15.30	Session 1: Advancements in Education and Feedback Analysis Chair: Nikitas Karanikolas Nikos Karousos, George Vorvilas, Despoina Pantazi and Vassilios Verykios. Summarizing University Students' Qualitative Feedback on Online Exams: A Microservice-Oriented Approach Maria Polychronaki, Ioannis Christidis, Michael G. Xevgenis, Dimitris Kogias and Helen C. Leligkou. My University Studies (M.U.St) – An Academic Proof of Concept for the Web3.0 Maria Koutroumani, Stefanos Balaskas and Maria Rigou. Learning through Gamification as perceived by Educators: A Survey-based Analysis of Affecting and Mediating Factors using SEM Evgenia Gkini, Panagiotis Tsaousis, Cleo Sgouropoulou and Ioannis Voyiatzis. Enhancing Informatics Education Through a Serious Game: Design, Development, and Pedagogical Impact	Session 2: Cybersecurity and Digital Compliance Chair: Ioannis Voyiatzis, Evangelos Fotopoulos Arne Roar Nygård and Sokratis Katsikas. Digital supply chain security for power sector operators in the light of the new EU directives and regulation Asimina Tsouplaki and Christos Kalloniatis. From Exposure to Expertise: Enhancing Cybersecurity Training in the Internet of Cloud (IoC) Konstantinos Kalodanis, Panagiotis Rizomiliotis, Georgios Feretzakis, Dimitrios Kalles, Vassilios Verykios and Dimosthenis Anagnostopoulos. Enhancing Transparency in Large Language Models to Meet EU AI Act Requirements Georgios Gerontakis, Panayiotis Yannakopoulos and Ioannis Voyiatzis. From Vulnerability to Verification: Building a Tool to Remotely Test Windows Hello PIN Security on systems without TPM
15.30-16.00	Break	
16.00-17.30	Session 3: Applications of Machine Learning in IoT and Smart Systems Chair: Ioannis Voyiatzis, Magda Gkini	Session 4: ML Techniques and NLP tools for Text Chair: Vassilios Verykios

	Room1	Room2
	Dimitris Koutras, Giorgos Dimitrakopoulos, Vangelis Malamas, Panayiotis Kotzanikolaou and Christos Douligeris. Comparative Analysis and Implementation of HTTP3, MQTT, and CoAP for IoT Applications Ioannis Glykos, Dimitrios Loukatos, Antonios Papaggelis, Nikolaos Androulidakis and Konstantinos Arvanitis. A scalable, flexible, low cost and secure architectural framework for greenhouse IoT Konstantinos Papapostolou and Vassilis Kapsalis. Development of a Smart Electric Vehicle Charging Station Management System Ioannis Ioannidis, Apostolos Anagnostopoulos and Basilis Mamalis. Smart Forest Fire Monitoring and Detection System using Microservices and Container-based Virtualization	Konstantinos Kyritsis, Isidoros Perikos, Charalampos M. Liapis, Vaggelis Kapoulas and Michael Paraskevas. Analysis of the Performance of Transformers and Ensemble Schemes for Twitter US Airlines Sentiment Analysis Emmanouil Marakakis, Ioannis Tsampos and Orestis Nikologiannis. An Intelligent Chatbot in Greek Using Machine Learning Technology Nikitas Karanikolas and Mateusz Żywczak. Comparison of a Semi-Automatically Generated and a Manually Created Linguistic Rule-Based Stemmer for Polish by a Polish Native Speaker Constantinos Djouvas, Antonis Charalampous, Christos Christodoulou and Nicolas Tsapatsoulis. LLMs are not for everything: A Dataset and Comparative Study on Argument Strength Classification
17.30-18.00	Coffee Break	
18.00-19.30	Session 5: AI and Optimization Techniques Chair: Ioannis Voyiatzis, Georgios Gerontakis Panagiotis G. Giannopoulos, Vangelis Malamas and Thomas K. Dasaklis. Integration of Evolutionary Algorithms and Machine Learning techniques in routing-related problems: A review Emmanouil Karantoumanis and Nikolaos Ploskas. Optimizing concentrated solar power plants using adaptive sampling-based derivative-free algorithms George Tzelalis and Ioannis Refanidis. Towards Optimizing Fuel Consumption in Railways: A Generic Greedy Approach in Continuous Space Dimitrios Karapiperis, Georgios Feretzakis, Dimitris Kalles and Vassilios Verykios. Optimizing Sample Size in Machine Learning: Balancing Complexity and Generalization	Session 6: Large Language Models and Applications Chair: Nicolas Tsapatsoulis Ioannis Maslaris, Areti Karamanou, Evangelos Kalampokis and Konstantinos Tarabanis. Evaluating Large Language Models in Interaction with Open Government Data Dimitris Zeginis, Evangelos Kalampokis and Konstantinos Tarabanis. Applying an ontology-aware zero-shot LLM prompting approach for information extraction in Greek: the case of DIAVGEIA.gov.gr Ilias Zosimadis and Ioannis Stamelos. LLM-Enhanced Test Case Prioritization for Complex Software Systems Christina Antoniou and Nick Bassiliades. Utilizing LLMs and ontologies to query educational knowledge graphs
19.30-20.30	Tutorial: Reliability in Photovoltaic System Stylianos Voutsinas, Nikitas Karanikolas and Ioannis Voyiatzis, University of West Attica	

Saturday, December 14, 2024

	Room1	Room2
9.30-11.00	Session 7: Smart Cities and Digital Governance Chair: Arne Roar Nygård Iosif Nassar Kyriakidis, Charalampos Athanasios Papastamatiou, Elissaios Dionysios Patsis, Panagiotis Yannakopoulos and Ioannis Voyiatzis. Smart Cities Powered by Blockchain: Building the Foundation	WorkShop / Tutorial on “Digital Twins for Design Thinking” (building on the known approach developed for the NEMO Summerschool series) Dr. Wilfrid Utz, OMILAB gGmbH Dr. Z. Garofalaki, University of West Attica

	Room1	Room2
	Chryso Kavallari and Euripidis Loukis. Government digital transformation during the COVID-19 pandemic: The case of the Greek Ministry of Education Yannis Stamatiou, Constantinos Halkiopoulos, Hera Antonopoulou and Maria Rigou. A Proposal for an Open, Secure and Flexible Platform for Smart, Cross-border, Municipality Services	Part one
11.00-11.30	Coffee Break	
11.30-13.00	Session 8: Revolutionizing the Edge Chair: Basilis Mamalis Eleftherios Batzolis and Dimitrios Karampatzakis. Accelerating Edge Intelligence: Challenges and Future Directions in Hardware-Driven Machine Learning Fotios Paparounas, Vasileios Christofas, Petros Amanatidis, Dimitris Karampatzakis and Thomas Lagkas. Evaluating Knowledge Distillation and Compression Techniques for Edge Class Devices Georgios Kalogeras, Michalis Papazekos and Vassilios Tampakas. Distributed Computing at the Edge A Modular Small-Scale Architecture for Smart Grid Energy Systems Georgios Fevgas, Thomas Lagkas, Vasileios Argyriou and Panagiotis Sarigiannidis. Water Stress Detection in Indoor Farming using Thermal Infrared Imaging	WorkShop / Tutorial on “Digital Twins for Design Thinking” (building on the known approach developed for the NEMO Summerschool series) Dr. Wilfrid Utz, OMiLAB gGmbH Dr. Z. Garofalaki, University of West Attica Part two
13.00-14.00	Lunch Break	
14.00-15.30	Session 9: Infrastructure Innovations Chair: Michael Xevgenis Theodoros Rizos, Spiridoula V. Margariti, Eleftherios Stergiou and Chrysostomos Stylios. Building a Real Live Video Streaming System Using Ephemeral Infrastructure Manos Garefalakis, Zacharias Kamarianakis and Spyros Panagiotakis. Remote Laboratory for developing an IoT system Konstantinos Mavrommatis. A new and innovator method of designing a fiber optic network for the extension of the local area network of a building. Konstantinos Mavrommatis. A new approach of achieving the safety of railways using fiber optics for data transmission and monitoring	Session 10: Exploring Datasets and Corpora Chair: Nikitas Karanikolas, Ioannis Galanakis Mohsan Ali, Nina Giallousi, Alexandros Melidis, Charalampos Alexopoulos and Yannis Charalabidis. GlossAPI: Architecturing the Greek Data Pile for LLM development Mara Mendes, Mohsan Ali and Yannis Charalabidis. Analyzing the Freedom of Information Requests Using Topic Modeling: Towards User-driven Open Government Data Ecosystems Petros Brimos, Evangelos Kalampokis and Konstantinos Tarabanis. Pre-trained Time Series Foundation Models for Traffic Flow Prediction Using Open Government Data: The case of Attica traffic dataset Paraskevi Tsoutsas, Konstantinos Solomos, Panos Fitsilis and Vyron Damasiotis. Financial and Accounting Dictionaries for Text Mining
15.30-16.00	Break	

	Room1	Room2
16.00-17.30	Session 11: Advanced Tools and Techniques in Digital Design and Validation Chair: Ioannis Voyiatzis George Kranas, Kosmas Kariotis, Antonios Dadaliaris, George Stamoulis and Athanasios Kakarountas. Transforming Synthesized Netlists into a Feasible & Compliant Functional Bookshelf Format Ioulia Simou, Andreas Komninos and John Garofalakis. Validating State-of-the-Art Virtual Keyboard Simulators with Empirical Data Sofia Kyratzi, Alexander Agathos and Philip Azariadis. Feature Reconstruction from Point Clouds with Application in Creo Parametric Antonios Andreatos. Using ChatGPT for developing and simulating a timer circuit in VHDL – A case study 7214: Vassilios Tsakanikas, Petros Potsikas and Vasilis Tampakas. From Tweets to Communities: Graph Reasoning Techniques for Twitter Analysis	Session 12: AI-Powered Applications in Human Behavior and Engagement Chair: Isidoros Perikos Andreas Komninos, Ioulia Simou and John Garofalakis. Towards Psycho-Cognitive Modelling of Mobile Text Entry Behaviour Rozita Tsoni, Maria Tolika, Dimitris Karapiperis and Vassilios Verykios. From Volunteers to Voters: Machine Learning Insights into Citizen Engagement Ioannis Galanakis, Nikitas Karanikolas, Athanasios Voulodimos and Ioannis Voyiatzis. A Novel Algorithm for Predicting Human Behaviors through a Holistic Model Pose Analysis 1215: Theodora Kremantala, Stefanos Balaskas and Maria Rigou. Understanding User Attention and Engagement in Digital Marketing: An Eye-Tracking Analysis of Native Advertisements Dimitrios Antoniadis, Panagiotis G. Giannopoulos, Vangelis Malamas, Panos T. Chountalas, Yannis A. Pollalis and Thomas Dasaklis. The Integration of Artificial Intelligence, Big Data, and IoT in E-Recruitment and Selection: A Systematic Review
17.30-18.00	Coffee Break	
18.00-19.30	Session 13: Innovations in AI and Machine Learning for Decision Support Chair: Andreas Komninos Ioanna Kechagia and Athanasios Kakarountas. Artificial Intelligence in Property Valuation: Exploring Market Dynamics and Influential Factors Anastasios Manos, Elizabeth Filippidou, Nikolaos Pavlidis, Georgios Vachtanidis, Georgios Karanasios, Ioannis Mallidis, Orestis Tsolakis and Georgia Aifadopoulou. A real world case study on sales prediction using Artificial Intelligence Fotios Panagiotopoulos and Vassilios Chatzis. The Role of ChatGPT in Modern Human Resource Management: A Decision Support Perspective for Human Resource Allocation Problems. Antigoni Panagiotopoulou, Dimitrios Rimpas and Andreas Papadakis. Data Modelling and Prediction of OBD-II Time Series using ARIMA 7314: Eirini Ioannidou, Rafail Promikyridis and Efthimios Tambouris. Legal and Ethical Issues Arising from the Use of Chatbots in Public Administration	Session 14: Graph and Network Analysis in Modern Applications Chair: Iraklis Varlamis, Stylianos Voutsinas Margarita Gerochristou and Apostolos N. Papadopoulos. Top-k Butterfly Detection in Probabilistic Networks Theodoros Mavrovitis and Ioannis Refanidis. Creation of knowledge graph from free text using Neo4j and Stanza: An application in machine translation from English to Spanish Charalampos M. Liapis, Isidoros Perikos, Konstantinos Kyritsis, Vaggelis Kapoulas and Michael Paraskevas. A Convolutionally-Informed XLM-RoBERTa for Classifying Short Text Inquires in Greek School Network Alex Marios Remountakis and Vasilios Tampakas. Beyond Metrics: Analyzing User Influence Through Interactive Content in Reddit's Social Network.

	Room1	Room2
19.30-20.00	HETiA: Hellenic Emerging Technologies Industry Association Konstantina Tsiapali, HETiA member of the BoD	
20:00-23:00	Gala Dinner	

Sunday, December 15, 2024

	Room1	Room2
9.30-11.00	Session 15: AI and IoT for Real-World Challenges Chair: Theofanis Aravanis Nikolaos Androulidakis, Maria Kondoyanni, Dimitrios Loukatos, Emmanouil Psomiadis and Konstantinos Arvanitis. Exploiting an Easy to Use Machine Learning Platform to Improve the Harvesting Efficiency in Orchards: Preliminary Results Spyridon Saridakis, Panagiotis Arkoylis, Marios Kaminaris, Markos Pantelidakis, Christos Mourgelas, Ioannis Vogiatzis and Stavros Fatouros. Black Box for Drones: An Approach to Reliable Flight Data Logging Marinos Kouvaras and Christos Sardianos. Air traffic information aggregation using satellite and remote sensor data with interactive planning capabilities using crowdsourcing. Panos Fitsilis, Paraskevi Tsoutsas, Vyron Damasiotis and Vasileios Kyriatzis. Revealing Key Trends in Industry 5.0 Using Advanced AI Techniques	Session 16: Challenges in Digital Media, Accessibility, and Next-Generation Networks Chair: Konstantinos Mavrommatis Fotios Roumpies, Georgios Spathoulas and Athanasios Kakarountas. Synthetically Generated Media, types, detection, and the threat they lurk for users, state and private actors Ilias Tzimas and Christos Katsanos. Do Potential Issues Reported by Automated Tools Affect Guideline-based Web Accessibility Evaluation? A Case Study on Greek Public Hospitals Anastasios Vetsos, Dimitrios Uzunidis, Pericles Papadopoulos and Panagiotis Karkazis. Comparative analysis of three opensource 5G simulation tools Ioannis Konstantoulas, Iliana Loi, Kyriakos Sgarbas, Apostolos Gkamas and Christos Bouras. A Deep Learning Approach to User Allocation in a 5th Generation Network
11.00-11.30	Coffee Break	
11.30-13.00	Session 17: Advancing AI and Computational Methods in Diverse Applications Chair: Philip Azariadis Panagiotis G. Giannopoulos, Gregory P. Chondrokoukis and Thomas K. Dasaklis. Hybrid Differential Evolution Algorithm Integrating Operations Research and Reinforcement Learning approaches Elpiniki Papageorgiou, Anna Feleki, Nikolaos Papandrianos, Ioannis Apostolopoulos, Konstantinos Papageorgiou, Nikolaos Papathanasiou and Dimitrios Apostolopoulos. Multimodal Diagnosis using Deep Fuzzy Cognitive Map with Extreme Learning Machine Integrated into a Medical Decision Support System for Coronary Artery Disease and Non-Small Cell Lung Cancer Detection Christos Kampouris and Philip Azariadis. Evaluating the precision of AI-automated “stand2squatAI_biorig” app against video recording and stopwatch timing.	Session 18: Interface Design and Simulation in Emerging Digital Realities Chair: Dimitris Kalles Andreas Kousoulos, Angelos Fotopoulos, Dimosthenis Minas and Michalis Xenos. Exploring UAV Interfaces: An Eye-Tracking Study on Novice and Experienced Users Theofanis Aravanis, Grigorios Chrimatopoulos, Michalis Xenos and Efstratios Tzirtzilakis. Machine Learning-Based Geometric Interpolation for Fluid-Flow Modelling Despoina Moukanou, George Raptis and Christos Katsanos. Challenges in Transitioning from Desktop 3D to XR: The Case of VIRMUS on Meta Quest Pro Stella Menzilsidou, Evaggelia Tsiomi, Efi Vasiloudi, Andromachi Nanou and Dimitris

	Room1	Room2
	Panagiotis Filippakis and Stefanos Ougiaroglou. Condensing multi-label data based on Clustering	Karampatzakis. Designing Inclusive Coding Display Cards for Micro:bit
13:00-14:00	Closing	

The PCI 2024 Program Committee chairs:

Prof. Nikitas N. Karanikolas (UniWA)

Prof. Iraklis Varlamis (HUA)

Assoc. Prof. Kyriakos Sgarbas (UP)

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