

24th Pan-Hellenic Conference on Informatics – PCI'2020 – Program

Athens, Greece (Online) from 20 to 22 November, 2020

Friday 20/11 13:00-14:00 A Conference Opening

Friday 20/11 14:00-15:30 A Learning Technologies I

Short Paper	Using UML Activity Diagram for Adapting Experiments under a Virtual Laboratory Environment	Athanasios Sypsas and Dimitris Kalles
Full Paper	3D Simulations in Civil Engineering Laboratory Education	Ourania-Nika Golemati, Vasilis Zafeiropoulos and Dimitris Kalles
Full Paper	MOOCs in Higher Education: A Study on the Learning Effectiveness, Quality and Usability of a SPOC on Introduction to Programming	Georgios Psathas, Christos Katsanos, Thrasyvoulos Tsiatsos, Stergios Tegos and Stavros Demetriadis
Full Paper	Automated reasoning of learners' cognitive states using classification analysis	Christos Troussas, Akrivi Krouska, Filippos Giannakas, Cleo Sgouropoulou and Ioannis Voyiatzis

Friday 20/11 14:00-15:30 B Hardware

Full Paper	Leak detection in the pipeline network of an oil refinery - A pattern classification paradigm	George-Othon Glentis, Kristina Georgoulaki and Konstantinos Angelopoulos
Full Paper	Test and measurement assisted leak vibration signal analysis for leakages in metallic pipelines	Konstantinos Angelopoulos and George-Othon Glentis
Full Paper	Autonomous drone charging stations: A survey	Christos Mourgelas, Sokratis Kokkinos, Athanasios Milidonis and Ioannis Voyiatzis
Full Paper	A Review on Hardware Security Countermeasures for IoT: Emerging Mechanisms and Machine Learning Solutions	Emmanouel T. Michailidis, Dimitrios G. Kogias and Ioannis Voyiatzis

Friday 20/11 16:00-17:30 A Learning Technologies II

Full Paper	Usability and Educational Affordance of Web 2.0 tools from Instructors' Perspective	Akrivi Krouska, Christos Troussas and Cleo Sgouropoulou
Full Paper	Redesigning teaching strategies through an information filtering system	Christos Troussas, Akrivi Krouska, Filippos Giannakas, Cleo Sgouropoulou and Ioannis Voyiatzis
Full Paper	PeerTalk: Enabling Agent-Enhanced Real-Time Collaboration in MOOCs	Stergios Tegos, Apostolos Mavridis and Stavros Demetriadis
Full Paper	Quantifying the Difficulty of Academic Course Modules	Konstantinos Kelesidis, Dimitris Dervos and Antonis Sidiropoulos

Friday 20/11 16:00-17:30 B Wireless Computing & Telecommunication Systems

Full Paper	A Review on Propagation Related Issues for mm-Wave and THz Next Generation Cellular Networks	Ilias P. Misailidis and Konstantinos N. Voudouris
Full Paper	Comparison of VNE heuristic solutions with similar objective functions	Stelios Prekas, Panagiotis Karkazis, Panagiotis Trakadas and Vasileios Nikolakakis
Full Paper	Mobile Applications and Projects for Sustainable Urban Public Transportation: a Selective Review	Maria-Eftychia Angelaki, Theodoros Karvounidis and Christos Douligeris
Full Paper	Delay and spectrum analysis for V2X communication over 5G Networks	Athanasios Kanavos, Dimitrios Fragkos and Alexandros Kaloxylas

Friday 20/11 18:00-19:30 A Artificial Intelligence and Machine Learning

Short Paper	Q Learning applied on the Board Game Dominion	George Angelopoulos and Dimitris Metafas
Full Paper	Active Hidden Naive Bayes	Vangjel Kazllarof and Sotiris Kotsiantis
Full Paper	Online federated learning with imbalanced class distribution	Konstantinos Giorgas and Iraklis Varlamis
Full Paper	Transfer Learning for COVID-19 Pneumonia Detection and Classification in Chest X-ray Images	Iason Katsamenis, Eftychios Protopapadakis, Athanasios Voulodimos, Anastasios Doulamis and Nikolaos Doulamis
Full Paper	Deep Learning for Underwater Object Detection	Panagiotis Rizos and Vana Kalogeraki

Friday 20/11 18:00-19:30 B Cloud Computing

Full Paper	Preserving Data Availability in Edge Computing Systems with Diagonally Interleaved Coding	Ioannis Tzouros and Vana Kalogeraki
Full Paper	An Advanced Weighted Round Robin Scheduling Algorithm	Dimitris Tychalas and Helen Karatza
Short Paper	Cloud Computing as a Platform for Design-Oriented Applications	Sofia Kyrtzi and Philip Azariadis
Full Paper	A Load Balancing Algorithm for 5G Vehicular Cloud Computing Systems	Eirini Zoumi, Emmanouil Skondras, David Vellios, Angelos Michalas and Dimitrios D. Vergados

Saturday 21/11 09:30-11:00 A CSCI

Full Paper	From Cyber Terrorism to Cyber Peacekeeping: Are we there yet?	Maria Papathanasaki, Georgios Dimitriou, Leandros Maglaras, Ismini Vasileiou and Helge Janicke
Full Paper	The insider threat: Reasons, Effects and Mitigation Techniques	Dimitrios Tsiostas, George Kittes, Nestoras Chouliaras, Ioanna Kantzavelou, Leandros Maglaras, Christos Douligeris and Vasileios Vlachos
Full Paper	A Survey on Mobile User Perceptions of Sensitive Data and Authentication Methods	Vasileios Tsoukas, Anargyros Gkogkidis and Athanasios Kakarountas

Saturday 21/11 09:30-11:00 B Energy

Full Paper	A review of microprocessor based solar photovoltaic tracking systems	Ioannis Chaidoulis and Nikitas Karanikolas
Full Paper	Creating a Baseline for Robust Energy Savings Estimation	Eftychios Protopapadakis, Anastasia Garbi, Anna Malamou, Maria Kaselimi, Zisis Pontikas, Anastasios Doulamis, Nikolaos Doulamis, Kostas Vasilakis and Nossos Michas
Full Paper	A survey of fault detection and identification methods for Photovoltaic systems based on I-V curves	Stelios Voutsinas, Dimitrios Karolidis, Ioannis Voyiatzis and Maria Samarakou

Saturday 21/11 11:30-13:00 A Image Processing & Computer Vision

Full Paper	Deep Learning Platforms in Food Recognition	Oumit Topouoglou, Toumai Chaita, Chairi Kiourt and Lefteris Moussiades
Full Paper	On the Extension of the Haar Cascade Algorithm for Face Recognition: Case Study and Results	Euaggelos Michos, Stamatios Gkoumas, Ioanna Siakampeti and Christos Fidas
Short Paper	On the Effectiveness of Low-Cost Face Recognition with Deep Learning	Theodoros Georgakopoulos, Maria Koutroumani, Theodoros Moulias and Christos Fidas
Short Paper	Performance Evaluation of Convolutional Neural Networks for Gait Recognition	Kyriakos Apostolidis, Petros Amanatidis and George Papakostas

Saturday 21/11 11:30-13:00 B RDI I

Full Paper	Managing the Academic Strategy of a Greek Higher Education Institution using the Balanced Scorecard technique - From Theory to Practice	Manolis Chalaris and Theodoros Katsaros
Full Paper	Privacy-preserving model, architecture and solution for on-the-fly anonymization of 5G data streams	Evangelos Kosmatos
Full Paper	Review on energy storage systems for renewables – Global & Greece	Ioannis Chaidoulis and Nikitas N. Karanikolas
Full Paper	A Generalized Tonic-Clonic Seizure Detection Method in a Bathtub using a Natural Language Verification Step	Olga Petroulaki, Angeliki Bicaku and Athanasios Kakarountas
Full Paper	Towards the design of a Conceptual Framework for the operation of Intensive Care Units based on Big Data Analysis	Dimitris Markopoulos, Anastasios Tsolakidis, Nikitas N. Karanikolas and Christos Skourlas

Saturday 21/11 14:00-15:30 A DS&IoT

Full Paper	Internet of Things for Human and Industry Application: ALIOT Project and R&D Issues	Oleg Illiashenko, Vyacheslav Kharchenko and Olga Morozova
Full Paper	Training of ICT professionals in soft skills: the case of SEnDIng.	Polyxeni Kontodiakou and Aikaterini Sotiropoulou
Full Paper	Upskilling IT Professionals: A MOOC for the Data Science and IoT domains	Vasileios Gkamas, Maria Rigou, Alan Bruce and Teemu Patala
Full Paper	Knowledge diffusion through experiential education, focusing on robotic technologies, virtual reality and internet of things	Alexandros Spournias, Evanthia Faliagka, Christos Antonopoulos and Nikolaos Voros
Full Paper	A Low-Cost Example, Combining MIT App Inventor, Arduino Specific Components and Recycled Materials to Foster Engineering Education	Dimitrios Loukatos, Eleftherios Chondrogiannis and Konstantinos Arvanitis

Saturday 21/11 14:00-15:30 B RDI II

Full Paper	An integrated system for predicting students' academic performance in smart universities	Konstantinos Chytas, Anastasios Tsolakidis, Christos Skourlas and Nikitas Karanikolas
Full Paper	Data mining in Government Social Media	Eirini Manga and Catherine Marinagi
Full Paper	Towards a framework for increasing Students' participation in Quality Assurance procedures	George Meletiou, Nikitas Karanikolas and Christos Skourlas
Full Paper	Assessing the computational limits of GraphDBs' engines - A comparison study between Neo4j and Apache Spark	Ioannis Ballas, Vassilios Tsakanikas, Evaggelos Pefanis and Vassilios Tampakas

Saturday 21/11 16:00-17:30 A Embedded Systems

Full Paper	Architecture for Secure UAV Systems	Dimitrios Psilias, Athanasios Milidonis and Ioannis Voyiatzis
Full Paper	Low power general purpose loop acceleration for NDP applications	Athanasios Tziouvaras, Georgios Dimitriou, Fotis Foukalas and Georgios Stamoulis
Short Paper	Rapid, Formal Verification with Automated and Executable, Cycle-accurate simulators, and Generated Testbenches.	Michael Dossis
Full Paper	Development of an IoT seismograph	Stelios Voutsinas, Dimitrios Karolidis, Ioannis Voyiatzis and Maria Samarakou

Saturday 21/11 16:00-17:30 B Natural Language Processing

Full Paper	Towards a Requirements Engineering Framework based on Semantics	Kalliopi Kravari, Christina Antoniou and Nick Bassiliades
Short Paper	Designing a Software Application for the Multilingual Processing of the Linear A Script	Argyro Mavridaki, Eleni Galiotou and Evangelos Papakitsos
Full Paper	Lexicographic Environments in Natural Language Processing (NLP)	Nikoletta E. Samaridi, Nikitas N. Karanikolas and Evangelos C. Papakitsos
Short Paper	Designing a Greek Electronic Dictionary Based on Ontology	Nikoletta E. Samaridi, Nikitas N. Karanikolas, Evangelos C. Papakitsos and Michail Papoutsidakis

Saturday 21/11 18:00-19:30 A Human-Computer Interaction

Full Paper	CardSorter: Towards an Open Source Tool for Online Card Sorts	Georgios Melissourgos and Christos Katsanos
Full Paper	WKLM-FA: A Web Application for Automated Human-Computer Interaction Modeling of Web Form Filling Tasks	Nikos Karousos, Fotios Tatsis, Dionisis Karousos, Christos Katsanos, Michalis Xenos and Nikos Tselios
Full Paper	Banner Advertisement Effectiveness using Big-5 Personality Traits, Advertisement Recall, and Visual Attention	Semira Maria Evangelou and Michalis Xenos

Saturday 21/11 18:00-19:30 B Internet of Things

Full Paper	How Secure is Home: Assessing Human Susceptibility to IoT Threats	Emily Kate Parsons, Emmanouil Panaousis and George Loukas
Full Paper	Edge AI for Industry 4.0: An Internet of Things Approach	Athanasios Tziouvaras and Fotis Foukalas
Full Paper	A Hierarchical Fog-based Architecture for IoT-enabled Intelligent Traffic Lights System Services	Leontios Sotiriadis and Basilis Mamalis

Sunday 22/11 09:30-11:00 A PDDB I

Short Paper	Dynamic Rate Control in the Kafka System	Michalis Tsenos, Nikos Zacheilas and Vana Kalogeraki
Short Paper	An Improved GPU-based Algorithm for Processing the k Nearest Neighbor Query	Polychronis Velentzas, Panagiotis Moutafis and George Mavrommatis
Full Paper	Including the Quadtree index in SpatialHadoop	Francisco Garcia-Garcia, Antonio Corral and Luis Iribarne

Sunday 22/11 09:30-11:00 B AI4SC I

Full Paper	An Efficient Method for Accelerating Training of Short-Term Traffic Prediction Models in Large-Scale Traffic Networks	Athanasios Salamanis, George Gravvanis, Christos Filelis-Papadopoulos and Dimitrios Tzovaras
Full Paper	Benchmark Comparison of Methods for Approximate Neighborhood Estimation of Road Segments in Large-Scale Traffic Networks	Athanasios Salamanis, George Gravvanis, Christos Filelis-Papadopoulos and Dimitrios Michail
Full Paper	Smart Retail: Efficient in-store localization using ensemble classifiers	Vasilis Stavrou and Dimitris Papakyriakopoulos
Full Paper	A smartphone-enabled crowdsensing and crowdsourcing system for predicting municipality resource allocation stochastic requirements	Theodoros Xanthopoulos, Theodoros Anagnostopoulos, Christos Kytagias and Yannis Psaromiligkos

Sunday 22/11 11:30-13:00 A PDDB II

Full Paper	Prepartitioning in MapReduce Processing of Group Nearest-Neighbor Query	Panagiotis Moutafis, George Mavrommatis and Polychronis Velentzas
Full Paper	Resource Provisioning Schemes for Multiple Workflow Scheduling with Seclusion Requirements	Panagiotis Oikonomou, Kostas Kolomvatsos and Thanasis Loukopoulos
Full Paper	Distributed Time-Based Local Community Detection	Apostolos Papadopoulos and Georgios Tzortzidis

Sunday 22/11 11:30-13:00 B AI4SC II

Full Paper	A single-stage, Deep Neural Network detector for the detection and tracking of moving objects in real time	Georgios Charkoftakis and Maria Rangoussi
Full Paper	Pedagogical Agents in E-learning: a review of recent (2009-2019) research results	Fani Papoutsi and Maria Rangoussi
Full Paper	Towards a Fully Open-Source System for Monitoring of Crops with UAVs in Precision Agriculture	Dimosthenis C. Tsouros, Anastasia Terzi, Stamatia Bibi, Fotini Vakouftsi and Vassilis Pantzios
Full Paper	A Process Mining Approach for Resource Allocation Management in a Bike Sharing System	Ifigeneia Drosouli, Georgia Theodoropoulou, Georgios Miaoulis and Athanasios Voulodimos

Sunday 22/11 14:00-15:30 A Data & Process Mining

Short Paper	An ensemble forecasting method using univariate time series COVID-19 data	Charalampos M. Liapis, Aikaterini Karanikola and Sotiris Kotsiantis
Full Paper	Process Mining for Activities of Daily Living in Smart Homecare	Georgia Theodoropoulou, Alexandros Bousdekis, Georgios Miaoulis and Athanasios Voulodimos
Full Paper	Ranking Online User Reviews for Tourism Based on Usefulness	Konstantinos Tsamis, Andreas Komninos, Nikolaos Zotos and Konstantinos Kovas
Short Paper	Results Merging in the Patent Domain	Vasileios Stamatis and Michail Salampasis

Sunday 22/11 14:00-15:30 B Multimedia Systems & Software Engineering

Full Paper	Software Architecture Reconstruction via a Genetic Algorithm: Applying the Move Class Refactoring	Theodoros Maikantis, Angeliki-Agathi Tsintzira, Apostolos Ampatzoglou, Elvira-Maria Arvanitou, Alexander Chatzigeorgiou, Ioannis Stamelos, Matina Bibi and Ignatios Deligiannis
Full Paper	Ensemble Software Development Effort Estimation Using Data Envelopment Analysis	Konstantinos Charmanas, Nikolaos Mittas and Lefteris Angelis
Full Paper	Designing and Developing a VR Environment for Indoor Fire Simulation	Vlasis Charalampous, Jeries Besharat and Chrysostomos Stylios
Full Paper	Virtual Reality in Humanistic Prisons Education. The STEPS project.	Konstantinos Oikonomou, Athanassios Malamos, Evgenia Lisitsa, Kyriakos Papadakis, Kalliopi Anagnostopoulou, Kelly Gerostergiou, George Trantas, Dimitris Liovas, Costas Stathopoulos, Elias Liakos and Dimitris Kolokotronis

Sunday 22/11 16:00-17:30 A Algorithms, Data Structures and Scientific Computation

Short Paper	An algebraic schema for JSON	Konstantinos Barlas and Petros Stefaneas
Full Paper	The sign of the slope of the objective function on identifying binding constraints in LP Problems	Dimitris Tsarmpopoulos, Christina Nikolakakou and George Androulakis
Full Paper	A Graph-based Method for Session-based Recommendations	Marina Delianidi, Michail Salampasis, Konstantinos Diamantaras, Theodosios Siomos, Alkiviadis Katsalis and Iphigenia Karaveli
Full Paper	Hybridization of bisection method for solving non-differentiable nonlinear equations	Ioannis Nikas and Theodoula Grapsa

Sunday 22/11 16:00-17:30 B Information & Knowledge-Based Systems

Full Paper	The SPADES Framework for Scalable Management of Spatio-textual Data	Akrivi Vlachou, Christos Doulkeridis, Nikolaos Koutroumanis, Dimitrios Pouloupoulos and Kjetil Nørnvåg
Full Paper	A Blockchain framework for reverse logistics of used medical equipment	Kostas Douladiris, Thomas Dasaklis, Fran Casino and Christos Douligeris
Full Paper	Confusion Matrix Analysis for NPS	Ioannis Markoulidakis, George Kopsiaftis, Ioannis Rallis, Ioannis Georgoulas, Anastasios Doulamis and Nikolaos Doulamis
Full Paper	A Real-Time Logic Program that Predicts COVID-19 Infection and Outcome	Nikos Papatheodorou, Nikos Ntantinakis, Stefanos Zervoudakis, Emmanouil Marakakis and Haridimos Kondylakis