

**7th South-East Europe Design Automation, Computer Engineering, Computer Networks and Social Media Conference**

Conference Programme

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| **Day 1** | **Friday 23/09/2022** |
| 14:00 - 14:30 | **Opening the event** |
| 14:30 – 16:00 | ***Keynote 1 -***  *Human versus Artificial Intelligence in Radiology,* ***Loukas Astrakas***Associate Professor of Medical Physics, University of IoanninaRoom: A  |
|  | Topic A: **Artificial Intelligence and Applications**Chair: P. Karvelis - Room: A | Topic B: **Design Optimization and Implementation**Chair: E. Karvounis - Room: B |
| 16:00 – 16:15 | **Cooperative Intelligent Transport Systems Solution: a Cooperative Safety Application (Online)**Nikos Dimokas, Pavlos Spanidis, Ioannis Tsetsinas, Ioannis Gkragkopoulos, Maria Gemou and Petros Karvelis | **Peer to Peer Federated Learning: Towards Decentralized Machine Learning on Edge Devices (Online)**Aristeidis Karras, Christos Karras, Konstantinos C. Giotopoulos, Dimitrios Tsolis, Konstantinos Oikonomou and Spyros Sioutas |
| 16:15 – 16:30 | **Object Detection for Low Light Images (Physical)**Dimitrios Mpouziotas, Eleftherios Mastrapas, Nikos Dimokas, Petros Karvelis and Evripidis Glavas | **Distributed Gibbs Sampling and LDA Modeling for Large Scale Big Data Management on PySpark (Online)**Christos Karras, Aristeidis Karras, Dimitrios Tsolis, Konstantinos C. Giotopoulos and Spyros Sioutas |
| 16:30 – 16:45 | **An overview of power supply technologies for Unmanned Aerial Vehicles (UAVs) and machine vision applications (Physical)**Antonios Pekias, George Maraslidis, Markos Tsipouras, Fotis Koumboulis and George Fragulis | **High Throughput of Image Processing with Keccak Algorithm using Microprocessor on FPGA (Physical)**Argyrios Sideris, Theodora Sanida, Antonios Chatzisavvas, Michael Dossis and Minas Dasygenis |
| 16:45 – 17:00  | **A hybrid network method for remaining useful life prediction**Zhiyuan Xie, Zhiyuan Xie and Zhiyuan Xie | **A Decision Support System for Monitoring and Control of Thermal Substations in District Heating Networks (Physical)**Vasileios Balafas, Leonidas Zouloumis, Nikolaos Ploskas and Giorgos Panaras |
| 17:00 – 17:15 | **Optimal Emotion Recognition in text**Michael Gerasimov, Amir Weinberg, Michal Reifer, Leah Fostick and Aharon Friedman | **Parameter Tuning of Linear Programming Solvers (Physical)**Nikolaos Ploskas |
| 17:15 – 17:30 | **Tracking individuals’ health using mobile applications and Machine Learning**Giannis Botilias, Lamprini Pappa, Petros Karvelis and Chrysostomos Stylios | **beHost: A web application for potential accommodation providers interested in participating in the sharing economy (Physical)**Foteini Tatsi, Fotios Tatsis and Kostas Karamanis |
| 17:30 – 18:00 | Coffee break |
|  | Session A: **Technologies Essentials in Education**Chair: S. Doukakis, T. Karvounidis, E. Seralidou - Room: A | Session B: **Biomedical Technology**Chair: A. Tzallas, M. Tsipouras, N. Giannakeas - Room: B |
| 18:00 – 18:15 | **Environmental Awareness in Preschool Education via Educational Robotics and STEAM Education (Online)**Zoe Christidi and Eleni Christopoulou | **Deep Neural Network Applications for Bioinformatics (Online)**Dimitrios Amanatidis, Konstantina Vaitsi and Michael Dossis |
| 18:15 – 18:30 | **Using STEM Learning Concepts with IoT Technology on the Road of Education for Sustainability: A Short Literature Review (Physical)**Konstantina Maidatsi, Eleni Christopoulou and Konstantinos Oikonomou | **Motor Imagery Approach for BCI Game Development (Physical)** Georgios Prapas, Kosmas Glavas, Alexandros T. Tzallas, Katerina Tzimourta, Nikolaos Giannakeas and Markos Tsipouras |
| 18:30 – 18:45 | **Introducing Algorithmic Thinking in Primary Education in Greece (Online)**Athanasios Karakostas, Vasilis Liarokapis and Akrivi Vlachou | **A bi-directional shortest path calculation speed up technique for RDBMS (Online)**Kyriakos Koritsoglou, Petros Laskas, Achilles Boursianis, Konstantinos Grigoriadis, Vaios Patras and Ioannis Fudos |
| 18:45 – 19:00 | **Exploring Pupils’ Knowledge and Awareness of E-Waste Recycling in Greece (Online)**Maria Eftychia Angelaki, Theodoros Karvounidis and Christos Douligeris | **A gene visualising database (Online)**Dimitrios Amanatidis, Kyriakos Kydoniefs and Michael Dossis |
|  | Topic A: **Artificial Intelligence and Applications**Chair: P. Karvelis - Room: A | Topic B: **Design Optimization and Implementation**Chair: E. Karvounis - Room: B |
| 19:00 – 19:15 | **Computational comparison of image preprocessing techniques for plant diseases detection (Physical)**Emmanouil Karantoumanis, Vasileios Balafas, Malamati Louta and Nikolaos Ploskas | **Development of a Tool for Auditing Accessibility of Public Infrastructure and Points of Interest in Urban Areas**Yiannis Tsampoulatidis, Charisios Achillas, Dimitrios Aidonis, Alexandros Mourouzis and Kyriakos Koritsoglou |
| 19:15 – 19:30 | **Visible Light Positioning: A Machine Learning Approach (Physical)**Vasileios Rekkas, Sotirios Sotiroudis, David Plets, Wout Joseph and Sotirios Goudos | **Evaluation of three structured light 3d scanners for the purpose of augmenting artisanal design and production of silversmithing artefacts in Ioannina (Physical)**Efthimios Apostolakis and Dimosthenis Chatzipanteliadis |
| 19:30 – 20:00 | ***Opening Ceremony****Room: A* |
| 20:00 | Cocktail party |

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| **Day 2** | **Saturday 24/09/2022** |
| 09:30 – 11:00 | ***Keynote 2 -***  *Next Generation Internet of Things: Requirements, Applications & Paradigms,* ***Panagiotis Sarigiannidis***Associate Professor of Electrical and Computer Engineering, University of Western MacedoniaRoom: A  |
| 11:00 – 11:30 | Coffee break |
|  | Topic C: **e-Health Technologies and Applications**Chair: K. Tzimourta & S. Evangelou - Room: A | Topic D: **Embedded Systems and Applications**Chair: C. Douligeris - Room: B |
| 11:30 – 11:45 | **Breast Cancer Classification of Histopathological Images using Deep Convolutional Neural Networks (Online)**Athanasios Kanavos, Efstratios Kolovos, Orestis Papadimitriou and Manolis Maragoudakis | **Autonomous Unmanned Ground Vehicle in Precision Agriculture – Τhe VELOS project (Physical)**Antonios Chatzisavvas, Minas Dasygenis and Malamati Louta |
| 11:45 – 12:00 | **A non-invasive closed-loop diagnostic and therapeutic wearable device for diabetic hyperglycemia prevention: System Architecture (Online)**Vasiliki Fiska, Sofia Evangelou, Nikolaos Giannakeas, Alexandros T. Tzallas, Pantelis Angelidis and Markos G. Tsipouras | **A Force Estimation Sensor System TestBed for Geological Phenomena Analysis based on Biomimetic (Online)**Konstantinos Kalovrektis, Apostolos Xenakis, Efthymios Mantalovas, George Stamoulis, Sarantos Psycharis and Niki Evelpidou |
| 12:00 – 12:15 | **ISOMETRIC: An Intelligent System of Outpatient Monitoring Evaluation Towards Rehabilitation In Cloud (Online)**Athanasios T. Patenidis, Eirini E. Mitsopoulou, Konstantinos Votis and Dimitrios Tzovaras | **A TinyML-based Alcohol Impairment Detection System For Vehicle Accident Prevention (Physical)**Anargyros Gkogkidis, Vasileios Tsoukas and Athanasios Kakarountas |
| 12:15 – 12:30 | **Variations of pressure data from insoles in normal population during the 10meter walking test and an appropriate parameters' extraction algorithm: a pilot study (Physical)**Dimitris Dimopoulos, Evangelos Kalogirou, Dimitrios N Varvarousis, Vasilis Nakos, Ioannis Manolis, Mohamed Hedi Boughariou, George I Vasileiadis and Avraam Ploumis | **Radiography Images with Transfer Learning on Embedded System (Physical)**Theodora Sanida, Argyrios Sideris, Antonios Chatzisavvas, Michael Dossis and Minas Dasygenis |
| 12:30 - 12:45  | **A Low Cost IoT TestBed System for Alzheimer's Early Stages Diagnosis in Health 4.0 Application (Online)**Konstantinos Kalovrektis, Apostolos Xenakis, Dimitra Sofianou, Gavriil Simatos, Georgios Papadopoulos and George Stamoulis | **Design and implementation of obstale detection system for powered wheelchairs (Physical)**Giorgos Tatsis, Kyriakos Koritsoglou, Evaggelos Karvounis, Ioannis Fudos, Konstantinos Votis and Dimitrios Tzovaras |
| 12:45 – 13:00 | **Augmented reality training, command and control framework for first responders (Online)**Oceane Peretti, Yannis Spyridis, Achilleas Sesis, Georgios Efsthathopoulos, Anastasios Lytos, Thomas Lagkas and Panagiotis Sarigiannidis | **An Intelligent Microprocessor Integrating TinyML in Smart Hotels for Rapid Accident Prevention (Online)**Angelos Zacharia, Dimitris Zacharia, Aristeidis Karras, Christos Karras, Ioanna Giannoukou, Konstantinos C. Giotopoulos and Spyros Sioutas |
| 13:00 – 13:3013:00 – 13:30 | Break**Topic Poster:** ***Reducing Power Consumption in Refrigeration Equipment using IoT Technology: The SmartFridge Project***  ***(Physical)****Kyriakos Koritsoglou, Maria Papadopoulou, Achilles Boursianis, Aikaterini Griva, Spyridon Nikolaidis and Sotirios Goudos****Classification and Characterization of Embryo Images for Assisted Reproduction Using Artificial Intelligence and Computer Vision: The SmartEmbryo Project***  ***(Physical)****Achilles Boursianis, Maria Papadopoulou, Sotirios Sotiroudis, Lazaros Alexios Iliadis, George Vergos, Themis Gatzoulis, Achilleas Papatheodorou, Kostas Kokkinidis, Spyridon Nikolaidis and Sotirios Goudos****Recognition and Direct Characterization of Cultural Items for the Education and Promotion of Byzantine Music Using Artificial Intelligence: The Ymnodos Project (Physical)*** *Achilles Boursianis, Maria Papadopoulou, Sotirios Sotiroudis, Lazaros Iliadis, Dimitrios Kampelopoulos, Konstantinos Kokkinidis, Spyridon Nikolaidis and Sotirios Goudos* |
|  | Session A: **Technologies Essentials in Education**Chair: S. Doukakis, T. Karvounidis, E. Seralidou - Room: A | Session B: **Biomedical Technology** Chair: A. Tzallas, M. Tsipouras, N. Giannakeas - Room: B |
| 13:30 – 13:45 | **Assessment of data carriers with the SOLO taxonomy in Scratch (Physical)**Theodoros Karvounidis, Anastasios Ladias and Christos Douligeris | **Brain MRI based diagnosis of autoimmune diseases using deep learning (Online)**Dimitrios Amanatidis, Georgios Chatzisavvas and Michael Dossis |
| 13:45 – 14:00 | **Introducing the Fundamentals of Artificial Intelligence to K-12 Classrooms According to Educational Neuroscience Principles (Online)**Thanassis Drivas and Spyridon Doukakis | **Tourette Syndrome’s Coprolalia Explanation using Bipartite Graph Matching of Thoughts and Game Theoretic Model for Symptoms Minimisation (Physical)**Evangelos Spyrou, Christoforos Nestoris and Chrysostomos Stylios |
| 14:00 – 14:15 | **Augmented Reality and Internet of Things Trends in Education (Online)**Panagiotis Gkotsiopoulos, Eleni Seralidou and Christos Douligeris | **Analysis of Emotions through the Use of Physiological Signals (Physical)**Konstantinos Sakkas, Alexandra Tsogka, Athanasios Gkimitzoudis, Nikolaos Giannakeas, Katerina D. Tzimourta, Markos Tsipouras, Euripidis Glavas and Alexandros Tzallas |
| 14:15 – 15:00 | **“Pythagorean Academy” – A game for the teaching of junior high school mathematics using mobile devices (Online)**Dimitra Tzoumpa, Eleni Seralidou, Athanasios Alougdelis and Christos Douligeris | **Human activity recognition using machine learning techniques (Physical)**Vasileios Nastos, Alexandros Arjmand, Klevis Tsakai, Dimitrios Dimopoulos, Dimitrios Varvarousis, Alexandros Tzallas, Nikolaos Giannakeas, Avraam Ploumis and Christos Gogos |
| 15:00 – 15:30 | Lunch break |
|  | Session C: **Scheduling and Timetabling in Practice and Theory**Chair: C. Gogos, C. Valouxis, P. Alefragis - Room: A |  Session D:  **Towards the Self-powered IoT**Chair: G. Doumenis, I. Masklavanos - Room: B |
| 15:30 – 15:45 | **A mathematical formulation for constructing feasible solutions for the Post Enrollment Course Timetabling Problem (Physical)**Angelos Dimitsas, Christos Valouxis, Vasileios Nastos and Christos Gogos | **Efficiency of SuperCap storage in energy harvesting micropower supplies (Physical)**Ioannis Masklavanos, Christos Koutsos and Gregory Doumenis |
| 15:45 – 16:00 | **Sampling Points Selection Algorithm for Advanced Photolithography Process (Physical)**Aris Magklaras, Christos Gogos, Panagiotis Alefragis, Christos Valouxis and Alexios Birbas | **Design and implementation of an indoors light simulator (Physical)**Vasiliki Naskari, Christos Koutsos and Ioannis Masklavanos |
| 16:00 – 16:15 | **Modeling a balanced commute timetabling problem in the context of teaching Integer Programming (Physical)**Christos Gogos, Angelos Dimitsas, Christos Valouxis and Panayiotis Alefragis | **Magnetic harvester for autonomous steel health monitoring sensors**Angelos Kastsoulas, Polychronis Pattakos, Spyridon Angelopoulos, Aphrodite Ktena and Evangelos Hristoforou |
| 16:15 - 16:45 | **Automated identification of fraudulent financial statements by analyzing data traces (Physical)**Evangelos Chytis, Vasileios Nastos, Christos Gogos and Angelos Dimitsas | **Lightweight operation scheduling for self-powered IoT devices (Physical)**Ioannis Masklavanos and Gregory Doumenis |
| 16:45 – 17:00 | Lunch break |
|  | Topic E: **Human-Computer Interaction**Chair: M. Vavva- Room: A | Topic F: **Mobile, Ad Hoc and Sensor Network Optimization and Management**Chair: G. Tsoumanis - Room: B |
| 17:00 – 17:15 | **Virtual and augmented experience in cultural places: Their integration in the learning process Virtual and augmented**Fotios Mposmos, Alexandros Tzallas, Markos Tsipouras and Nikolaos Giannakeas | **A Fairness-aware Coverage Algorithm for Drone Swarms (Physical)**Konstantinos Bezas, Georgios Tsoumanis, Kyriakos Koritsoglou, Konstantinos Oikonomou, Alexandros Tzallas, Nikolaos Giannakeas, Markos Tsipouras and Constantinos Angelis |
| 17:15 – 17:30 | **A survey on the awareness on Virtual Reality, Internet of Things and Blockchain in the 4th IR era (Physical)**Konstantinos Sakkas, Niki Eleni Ntagka, Panagiota Vinni, Paraskevi Artemi, Aristidis Anagnostakis, Nikolaos Giannakeas, Katerina D. Tzimourta, Alexandros Tzallas and Euripidis Glavas | **A Proposed Methodology for Enhancing User Experience in Mobile Applications Design for Cultural Promotion (Online)**Gerasimos Vonitsanos, Yorghos Voutos, Theodor Panagiotakopoulos, Andreas Kanavos and Phivos Mylonas |
| 17:30 – 18:00 | **An experimental protocol for exploration of stress in an immersive VR scenario with EEG (Physical)**Andreas Miltiadous, Vasileios Aspiotis, Konstantinos Sakkas, Markos Tsipouras, Ai Husein Sami Abosaleh, Nikolaos Giannakeas, Euripidis Glavas and Alexandros Tzallas | **Efficient Peer-to-Peer Unicasting for VANET Architectures via Enhanced Monolithic Protocols (Online)**George Amponis, Thomas Lagkas, Dimitris Karampatzakis, Panagiotis Radoglou Grammatikis, Vasileios Argyriou, Ioannis Moscholios, Sotirios Goudos and Panagiotis Sarigiannidis |
| 18:00 – 18:15 | **Applied Virtual Reality in 3D Geometry (Physical)**Konstantinos Sakkas, Alexandra Tsogka, Nikolaos Giannakeas, Katerina D. Tzimourta, Alexandros Tzallas and Euripidis Glavas | **Scavenging PyPi for VLSI Packages (Online)**George Kranas, Antonios Dadaliaris, Panagiotis Oikonomou and Michael Dossis |
| 18:15 – 18:30 | **Civic Fictions: Exploring the Socio-technical Implications of Augmented Reality in Future Cities through Science Fiction Prototyping (Physical)** Al Husein Sami Abosaleh and Vasilis Vlachokyriakos | **Safe Driving Mobile Application using Gamification (Physical)**Platon Dimitriadis, Nikos Dimokas and Petros Karvelis |
| 20:00 | Dinner |

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| **Day 3** | **Sunday 25/09/2022** |
|  | Topic G: **Industrial informatics**Chair: E. Spyrou - Room: A | Topic H:  **Social Networks, Crowdsourcing, and Crowdsensing**Chair: V. Liagkou - Room: B |
| 09:30 – 10:00 | **A mink-fur farm livestock management platform. The case of WelMink project (Online)**Evangelos Tsipis, Panagiotis Karagiannis, Malamati Louta and Thomas Kyriakidis | **Social Media and Consumer Behaviour: Exploratory Factor Analysis (Online)**Dimitrios Amanatidis, Ifigeneia Mylona and Michael Dossis |
| 10:00 – 10:15 | **Open weather data evaluation for crop irrigation prediction mechanisms in the AUGEIAS project (Online)**Thomai Karamitsou, Dimitrios Seventekidis, Christos Karapiperis, Konstantina Banti, Ioanna Karampelia, Thomas Kyriakidis and Malamati Louta | **Global Graph Clustering and Local Graph Exploration for Community Detection in Twitter (Online)**Christos Karras, Aristeidis Karras, Konstantinos C. Giotopoulos, Ioanna Giannoukou, Dimitrios Tsolis and Spyros Sioutas |
| 10:15 – 10:30  | **On Decentralizing Federated Reinforcement Learning in Multi-Robot Scenarios (Online)**Jayprakash S. Nair, Divya D. Kulkarni, Ajitem Joshi and Sruthy Suresh | **Developing a news classifier for Greek using BERT (Online)**George Gkolfopoulos and Iraklis Varlamis |
| 10:30 – 10:45 | **Retradeables: the first online marketplace for used F-gases in Europe (Physical)**Nikolaos Barmparitsas, Alice Baronchelli, Sotirios Karellas, Platon Pallis and Sotirios Thanopoulos | **Greek Parliament Members on Instagram: A study on building a political image (Online)**Ifigeneia Mylona, Dimitrios Amanatidis and Michael Dossis |
| 10:45 – 11:15 | Coffee break |
|  | Session E:  **The Challenges for Skillful Training in the Industry 4.0 Era** Chair: C. Stylios, V. Liagkou, A. Christopoulos - Room: A | Topic I: **Security and Privacy**Chair: A. Anagnostakis - Room: B |
| 11:15 – 11:30 | **Virtual reality cultural pathways: young Students perspectives**George Papantzikos, Athanasios Christopoulos and Chrysostomos Stylios | **Security and Privacy Vulnerabilities in Human Activity Recognition systems (Physical)**Vasiliki Liagkou, Chrysostomos Stylios and Sofia Sakka |
| 11:30 – 11:45 | **Proposed Industry 4.0 Maintenance framework for critical and demanding infrastructures and processes (Physical)**Vasileios Karaiskos, Nikolaos Zinas, Theodosios Gkamas, Ion-Anastasios Karolos, Christos Pikridas, Nikolaos Vrettos, Vasileios Tsioukas and Sotirios Kontogiannis | **Security Revisited: Honeytokens meet Google Authenticator (Online)**Vassilis Papaspirou, Maria Papathanasaki, Leandros Maglaras, Ioanna Kantzavelou, Christos Douligeris, Mohamed Amine Ferrag and Helge Janicke |
| 11:45 – 12:00 | **Bringing Educational Neuroscience to Distance Learning with Design Thinking (Online)**Konstantinos Dimitropoulos, Stylianos Mystakidis and Maria Fragkaki | **A peer, “wallet-only” consensus schema for ownership transfer over finite populations**Aristidis Anagnostakis, Nikolaos Giannakeas, Alexandros Tzallas, Markos Tsipouras and Euripidis Glavas |
| 12:00 – 12:15 | **Designing a travel Recommender System**Spiridoula V. Margariti, George Pachoulas, Giannis Botilias, Dimitrios Salmas and Chrysostomos Stylios | **Self-sovereign, verifiable, ubiquitous and privacy preserving public entity documents through the use of blockchain technology (Online)**Konstantinos Papageorgiou and Georgios Spathoulas |
| 12:15 – 12:30 | **Supporting Mechatromics Academic Curriculum Beyond Technical Skills (Online)**Gilberto Marzano | **Participatory, location-based systems in community place-making (Physical)**Alexandra Tzanidou and Vasilis Vlachokyriakos |
| 12:30 – 13:00 | Break |
| 13:00 – 14:30 | **Conference Closing** |