



Edge Intelligence

2022
EMERGING
TECH CONFERENCE

 **ETiA**
EXPANDING THE DIGITAL FRONTIERS



ΠΑΝΕΠΙΣΤΗΜΙΟ
ΠΑΤΡΩΝ
UNIVERSITY OF PATRAS



The first Greek annual industry & academia conference on emerging technology domains!

1st Emerging Tech Conference (ETCEI), 2022

“EDGE INTELLIGENCE”

Conference Program

Venue:

Conference and Cultural Center of the University of Patras

Rooms:

I4 – Main HALL

I11 – Room

Schedule:

Day 1: 2 Parallel Sessions 09:00 – 19:15

Day 2: 2 Parallel Sessions 09:00 – 15:30

Zoom Links

Hybrid Mode Execution

[Zoom Link 1](#) Covers all events and parallel sessions, which take place in Main HALL (I4) for Day 1 and Day 2

[Zoom Link 2](#) Covers all events and parallel sessions, which take place in Room I11 for Day 1 and Day 2

Paper Presentations:

15 min

Manuscript number is the EasyChair ID

Submission Statistics & Publication Information

Accepted Papers and Technical Reports: 54

Proceedings will be published on EPiC (by EasyChair), which is indexed in Scopus Database following the required review / editing

Wednesday 26/10/2022 – DAY 1	
09:00 – 09:30	Registrations & Welcome coffee
09:30 – 10:15	<p>Main HALL (I4) ZOOM Link 1</p> <p>Opening:</p> <ul style="list-style-type: none"> • Prof. Christos BOURAS (Rector, University of Patras) • Prof. Athanasios KYRIAZIS (General Secretary of R&I) • Prof. Panagiotis DIMOPOULOS (Vice Rector for Research and Development, University of Patras) • Prof. Dimitris MOURTZIS (Vice President for Research and Development, University of Patras) Conference Overview • Prof. Vassilios MAKIOS (Professor Emeritus at University of Patras) • Dr. Manolis ZERVAKIS (President, Hellenic Emerging Technologies Association) <p style="text-align: right;">Master of Ceremony: Prof. Dimitris MOURTZIS</p>
10:15 – 10:45	<p>Main HALL (I4) ZOOM Link 1</p> <p>Keynote Speaker: Prof. Dimitris MOURTZIS Title: “Industry 4.0 and beyond”</p>
10:45 – 11:45	<p>Main HALL (I4) ZOOM Link 1</p> <p>Hellenic Electricity Distribution Network Operator (HEDNO) S.A. Special session: “DSOs Transformation in the new Digital Era”</p>
	<p style="text-align: center;">10:45 – 10:55</p> <p>Dr. Anastasia KYRSANIDI (Director of Peloponnese / Epirus Region Department) “Transforming the Distribution Network” Session Chair: Dr. Manolis ZERVAKIS</p>
	<p style="text-align: center;">10:55 - 11:10</p> <p>Dr. Dimitrios STRATOGLIANIS (HEDNO - Head of Projects Management Section – Strategy, Operational Planning & Transformation Department) “Presentation of the X-FLEX Project (Integrated energy solutions and new market mechanisms for an eXtended FLEXibility of the European grid)” Session Chair: Dr. Manolis ZERVAKIS</p>
	<p style="text-align: center;">11:10 - 11:25</p> <p>Dr. Maria VAVVA (HEDNO - Head of Project and Construction Section Region of Ioannina - Peloponnese / Epirus Region Department) “Presentation of the ALFION Project (ALternative Fuel Implementation in igOumeNitsa)” Session Chair: Dr. Manolis ZERVAKIS</p>
	<p style="text-align: center;">11:25 - 11:45</p> <p>Roundtable: “Smart Grids and the role of research & innovation in the energy transition” Participants: Dr. Georgios LOUKOS (HEDNO) – Director of Research & Innovation Department, Professor Antonios ALEXANDRIDIS – President of Electrical and Computer Engineering Department (UPATRAS), Dr. Konstantinos CHRYSAGIS (PPC) – Director of Research Coordination Programmes Department, Dr. Sotiris ATHANASIOU (SUNLIGHT) – R&D Manager Moderator: Mr. Georgios STRAVOPODIS (HETiA – Cluster Manager)</p>
11:45 – 12:00	Coffee Break

Wednesday 26/10/2022 – DAY 1			
12:00 - 13:15	Parallel Sessions – Paper Presentations		
		Main HALL (I4) ZOOM Link 1 S1.1 Session Chair: Prof. Panagiotis DIMOPOULOS	Room I11 ZOOM Link 2 S2.1 Session Chair: Prof. Nikos AVOURIS
	12:00 – 12:15	2075	129
	12:15 – 12:30	2720	1034
	12:30 – 12:45	2992	1688
	12:45 – 13:00	3549	1800
	13:00 – 13:15	8865	2187
13:15 – 14:00	Lunch Break		
14:00 – 15:15	Parallel Sessions – Paper Presentations		
		Main HALL (I4) ZOOM Link 1 S1.2 Session Chair: As. Prof. Gregory DOUMENIS	Room I11 ZOOM Link 2 S2.2 Session Chair: Prof. Alexis BIRBAS
	14:00 – 14:15	6899	2260
	14:15 – 14:30	7696	3548
	14:30 – 14:45	8214	6348
	14:45 – 15:00	8631	8496
15:00 – 15:15	8769	9162	
15:15 – 15:45	Main HALL (I4) ZOOM Link 1 Keynote Speaker: Dr. Michael TZANNES (remote) Title: “Edge Intelligence: An Industry Perspective” Session Chair: Dr. Manolis ZERVAKIS		
15:45 – 16:00	Coffee Break		
16:00 – 17:15	Parallel Sessions – Paper Presentations		
		Main HALL (I4) ZOOM Link 1 S1.3 Session Chair: Prof. Spiros DENAZIS	Room I11 ZOOM Link 2 S2.3 Session Chair: Dr. Yiannis KIKIDIS
	16:00 – 16:15	1106	3486
	16:15 – 16:30	1129	3656
	16:30 – 16:45	1524	4057
	16:45 – 17:00	2214	4140
17:00 – 17:15	2324	5221	
17:15 – 17:30	Coffee Break		

Wednesday 26/10/2022 – DAY 1			
17:30 – 18:00	Main HALL (I4) ZOOM Link 1 Keynote Speaker: Prof. Alexios BIRBAS Title: “Edge Computing Trends: Cloud-sized AI at the Edge”		
18:00 – 19:15	Parallel Sessions – Paper Presentations		
		Main HALL (I4) ZOOM Link 1 S1.4 Session Chair: Prof. Konstantinos MOUSTAKAS	Room I11 ZOOM Link 2 S2.4 Session Chair: Prof. Sotirios NIKOLETSEAS
	18:00 – 18:15	1385	455
	18:15 – 18:30	1850	1041
	18:30 – 18:45	2229	2220
	18:45 – 19:00	3707	2583
19:00 – 19:15	5960	9213	
19:15 – 21:00	Networking Cocktail at the Foyer		

Thursday 27/10/2022 – DAY 2				
09:00 – 10:30	Parallel Sessions			
		Career Day - UPatras Main HALL (I4) ZOOM Link 1 S1.5 Session Chair: Dr. Manolis ZERVAKIS	Paper Presentations Room I11 ZOOM Link 2 S2.5 Session Chair: Prof. Ioannis TOMKOS	
	09:00 – 09:20	D. MOURTZIS: Skills and Competencies for Education	09:00 – 09:15	9543
	09:20 – 09:30	P. DIMOPOULOS: Entrepreneurship Support Actions METON	09:15 – 09:30	5808
	09:30 – 09:40	A. RAFAILIDES: Technology Transfer Office (TTO) UPatras	09:30 – 09:45	6950
	09:40 - 09:50	P. DIMOPOULOS: Patras IQ	09:45– 10:00	7860
	09:50 – 10:00	T. MICHALAKEA: Success in the labor market: A supportive framework for students and graduates	10:00 – 10:15	5230
	10:00 – 10:10	A. PLESSAS: Digital tools to connect graduates with the labor market	10:15 – 10:30	9009
	10:10 – 10:20	I. IOANNOU: Graduate Tracking: The Eurograduate 2022 Initiative		
	10:20 – 10:30	A. TSAKMAKA: How to prepare for your dream job		
10:30 – 10:40	Coffee Break			
10:40 – 12:50	Parallel Sessions			
		Career Day – UPatras Main HALL (I4) ZOOM Link 1 Moderator: Prof. Dimitris MOURTZIS	Paper Presentations Room I11 ZOOM Link 2 S2.6 Session Chair: Prof. Vasilios KOSTOPOULOS	
	10:40 – 10:50	ADVEOS	10:40 – 10:55	8391
	10:50 – 11:00	ANSYS	10:55 – 11:10	1729
	11:00 – 11:10	DELOITTE	11:10 – 11:25	8673
	11:10 – 11:20	ES SYSTEMS	11:25 – 11:40	9341
	11:20 – 11:30	EY	11:40 – 11:55	9785
	11:30 – 11:40	INACCESS	End of Conference Papers	
	11:40 – 11:50	IRIDA LABS		
	11:50 – 12:00	MEAZON		
	12:00– 12:10	RENESAS		
	12:10 – 12:20	THINK SILICON		

Thursday 27/10/2022 – DAY 2							
	<table border="1"> <tr> <td>12:20 – 12:30</td> <td>UBLOX</td> </tr> <tr> <td>12:30 – 12:40</td> <td>UPCOMINDS</td> </tr> <tr> <td>12:40 – 12:50</td> <td>YODIWO</td> </tr> </table>	12:20 – 12:30	UBLOX	12:30 – 12:40	UPCOMINDS	12:40 – 12:50	YODIWO
12:20 – 12:30	UBLOX						
12:30 – 12:40	UPCOMINDS						
12:40 – 12:50	YODIWO						
Main HALL (I4) ZOOM Link 1 Moderator: Prof. Dimitris MOURTZIS							
12:50 – 13:10	Invited Speaker: Michalis DRITSAS, Ministry of Development and Investments Title: Recent Science and Innovation Policies in Greece						
13:10 – 13:30	Invited Speaker: Prof. Spiros DENAZIS Title: “Supporting verticals by deploying open 5G and beyond infrastructures”						
13:30 – 13:50	Invited Speaker: Dr. Evangelos GOGOLIDES Title: “Infrastructure and services for the fabrication and characterization of Sensors, Electronic and Photonic Devices at NCSR Demokritos”						
13:50 – 14:10	Invited Speaker: Prof. Apostolos VANTARAKIS Title: “Service Providing Units of University of Patras”						
14:10 – 14:45	Round table: “Connecting industry to academia” Participants: Babis BAKOLIAS (ANSYS), John KIKIDIS (RENESAS), Manolis ZERVAKIS (HETiA), Prof. Dimitris MOURTZIS (UPatras) Moderator: Georgios STRAVOPODIS (HETiA)						
14:45 – 15:00	Closing Day 2 remarks: Prof. Dimitris MOURTZIS Edge Intelligence 2023 announcement: Dr. Manolis ZERVAKIS						
15:00 – 15:30	Lunch						

Conference Papers

A/A	ID	Title	Presenter
1.	129	Finding optimal ambulance parking spots in an urban area using artificial intelligence	
2.	455	Crucial infrastructure monitoring in the frame of the PROION Project	
3.	1034	An Artificial Intelligence Framework for Non-intrusive Reduced Order Modeling	
4.	1041	TSV-to-TSV Resistive Bridging Defects Post-Bond Testing and Diagnosis	
5.	1106	Next generation energy data management platforms: the MORE project	
6.	1129	Designing Intelligent Repair of Composite Structures with The Aid of a Laser Equipped Manipulator	
7.	1385	INDUSTRY 6.0, THE SIXTH INDUSTRIAL REVOLUTION: THE WISE ANTROPOCENTRIC	
8.	1524	Vibrational Spectroscopy instruments in tandem with data science can be used to serve food safety	
9.	1688	Quantification of Muscle Thickness in Gastrocnemius ultrasound images with deep learning	
10.	1729	A deterministic digital twin-based method for damage detection of composites subjected to impact loading: development, validation and time-efficiency improvement using a surrogate model	
11.	1800	Machine Learning Utilization for Global Steering Control Moment Gyroscope Clusters	
12.	1850	The University of Patras at the service of securing the future of its graduates	
13.	2075	Enabling the future smart grid: an edge computing approach	
14.	2187	Explainable Deep Learning for localising abnormal Parathyroid Glands in parathyroid scintigraphy	
15.	2214	Tuning Renesas Audio Products with Audio Tuning Tool (ATT)	
16.	2220	An appliance-driven, submeter-based energy disaggregation approach	
17.	2229	P versus NP	
18.	2260	Bio-inspired, resource-efficient design approach for designing Deep Learning models	
19.	2324	A Smart Oxygen Supply Control System Based on MEMS Capacitive Pressure Sensors	
20.	2583	Optimizing the relationship of positive-negative effects for smart homes technologies, with technical and economic criteria.	
21.	2720	Self-powered IoT nodes	
22.	2992	Design and implementation of an IoT-based automated monitoring and control system of an aeroponic greenhouse	

A/A	ID	Title	Presenter
23.	3486	Energy Disaggregation on Real Time Ground Truth Data	
24.	3548	Towards Solar Irradiance Forecasting Using Deep Learning on the Edge	
25.	3549	Distributed architecture for a multi-agent UAV monitoring system	
26.	3656	A Decentralized Collision Avoidance System using Velocity Obstacle Principles	
27.	3707	Modeling of superconductive circuits for quantum computers	
28.	4057	Anterior Cruciate Ligament Surgical Reconstruction through Finite Element Analysis	
29.	4140	Real Time Drowsiness Detection, Alerting and Reporting	
30.	5221	A framework for in-process quality inspection of laser welding applications	
31.	5230	Predictive Maintenance assisted by Edge-Computing Augmented Reality and 5G networks	
32.	5808	Optimization of Building Energy Exchange Using Simulated Annealing	
33.	5960	Immersive and Interactive VR Experience for Highlighting and Interpreting a Historic Event	
34.	6348	3D Virtual Thermal Imaging for Enhanced Scene Thermal Imaging Interpretation and Perception	
35.	6899	A Real-Time Edge Accelerator for Coherent Doppler Wind Lidars	
36.	6950	Efficient Waste Fleet Management in Smart Cities by Minimizing Fuel Consumption	
37.	7696	Energy efficient and reliable smart power grids in smart cities using edge intelligence	
38.	7860	Next Generation Food Quality and Safety assessment in Food Industry; from the current single measurement to Data Science and Internet of Food (things) approach	
39.	8214	End-point MCU implementation of Voice User Interface	
40.	8391	Estimating runtime, cost for Weather Research and Forecast tasks on AWS	
41.	8496	AI-assisted Serious Games: Interrogating an Avatar in Virtual Reality	
42.	8631	Remote monitoring and prognosis of the development of atherosclerotic plaque based on IoT and Cloud Computing	
43.	8673	Digital twin approach for post-harvest crop protection	
44.	8769	Towards Nearly Zero-Energy Buildings (NZEB) Based on Edge Artificial Intelligence (EAI)	
45.	8865	Smart Tunnel IoT System for Surveillance and Predictive Maintenance	
46.	9009	ProximIoT: A Proximity-based Product Marketing Platform	
47.	9162	A vision-based innovative system for terrestrial meteorological and solar measurements	

A/A	ID	Title	Presenter
48.	9213	An embedded vision warehouse management system architecture for pallet identification and tracking	
49.	9341	Empowering residential energy resources through virtual power plants aggregation: The TRUST-PV proposal	
50.	9543	A CRITICAL OVERVIEW OF THE “ANCIENT ARTIFICIAL INTELLIGENCE” SCIENCE AND ITS RELATION TO THE PANDORA’s MYTH!	
51.	9785	A manufacturing process digital twin network addressing business added value	

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