

June 16-20, 2025



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Timetable A: SpliTech2025 Program

June 16, 2025, University of Split, FESB, Split			
TIME/HALL	A103	A104	Small Hall
08:00	REGISTRATION		
09:00-10:30	RFID1: Special Session on Electromagnetic Innovation through Additive and Advanced Manufacturing Technologies (supported by IEEE CRFID and IEEE TC-AMES)	EM1: Engineering Modelling of Renewables	E1: Renewable energy and technologies
10:30-11:00	Coffee Break		
11:00-11:30	Keynote: Levent Sevgi - "From Engineering Electromagnetics to Electromagnetic Engineering: Teaching/Training Next Generations" (A100)		
11:30-13:00	RFID2: Special Session on Hardware, Intelligence and Engagement: From Circuits to Gameful IoT	EM2: Engineering Modelling - PART I	E2: Energy systems and technologies - PART I
13:00-14:00	Lunch		
14:00-14:30	Keynote: Lei Xing - "AI-enabled data-driven approaches for circular chemical economy research" (A100)		
14:30-16:00	RFID3: Special Session on Innovative Antennas and Intelligent Systems: Shaping the Future of RFID Application	EM3: Engineering Modelling - PART II	E3: Energy conversion and Energy Efficiency
16:00-16:30	Coffee Break (RFID P - Special Poster Session: "RFID/IoT Research Projects: Hardware and Software Solutions in Focus")		
June 17, 2025, University of Split, FESB, Split			
TIME/HALL	A103	A104	Small Hall
08:30	REGISTRATION		
08:30-10:00	RFID4: Special Session on Technology for Life: revolutionizing Work, Health monitoring, and Safety with modern Electronics & Backscattering Communications	P4: Environmental Applications	E4: Power Engineering and power systems
10:00-10:30	Keynote: Dubravko Čulibrk - "AI-disrupted Medicine and How to Apply It" (A100)		
10:30-11:00	Coffee Break		
11:00-13:00	Opening Ceremony which includes the Plenary Speech: Gaetano Marrocco (IEEE CRFID Distinguished Lecturer) - "Wireless Identification and Sensing without Conductors: The Laser-Induced Graphene Technology for Eco-Friendly IoT" Mat Santamouris - "Can we Cool our cities? Recent developments on Urban Heat Mitigation Technologies" (A100)		
13:00-14:00	Lunch		
14:00-14:30	Keynote: Giuseppe Marco Tina, "Harnessing the Sun: Technical and Economic Insights on Floating Photovoltaic Systems and Their Aquatic Integration" (A100)		
14:30-16:00	RFID5: Special Session on Exploring Hardware Aspects of Low Power Wireless Communication for IoT Applications Across Asia	LC: Life Cycle Assessment, Digital Solutions, and Sustainable Practices in Building Design and Construction	Meet The Editors Workshop
June 18, 2025, University of Split, FESB, Split			
TIME/HALL	A103	A104	Small Hall
08:30	REGISTRATION		
09:00-09:30	AIoTwin Keynote 3 Anwitaman Datta (De Montfort University & NTU Singapore) - On building trustworthy decentralized infrastructure: Experiences from the Blockchain I/O project (Big Hall)		
09:30-11:00	SC1: Smart City - Energy Modeling	P5: AI Applications	E5: Energy systems and technologies -PART II
11:00-11:30	Coffee Break		

11:30-13:00			
13:00-14:00	Lunch		
June 19, 2025, Hotel Elaphusa, Bol (island of Brač)			
TIME/HALL	VIS	KORČ ULA	BRAČ 1
08:00	REGISTRATION		
09:00-10:30	CS1: Humanized Computing: Citizen Science, Co-creation, and Emerging Technologies for Human-Centric Decisions - PART I	IoT4: Special Session on Artificial Intelligence and Deep Learning applied to Smart Environments	Keynote: Agis M. Papadopoulos - "The energy-water nexus: A challenge for the Mediterranean region" BD1: Cultural and Historical Considerations under Energy and Climate Constraints
10:30-11:00	Coffee Break		
11:00-11:30	Keynote: Sima Noghianian (IEEE APS Distinguished Lecturer) - "Empowering Connectivity: Wearable Antennas for Wi-Fi and 5G Applications" (BRAČ 1)		
11:30-13:00	CS2: Humanized Computing: Citizen Science, Co-creation, and Emerging Technologies for Human-Centric Decisions - PART II	IoT5: Special Session on Big Data and IoT Special	Keynote: Liping Wang - "Controlled Environment Agriculture (CEA), Community, and Sustainability" (BRAČ 1) BD2: Smart Systems and Energy Optimization in Buildings
13:00-14:00	Lunch		
14:00-14:30	Keynote: Roberto Garay-Martinez - "Energy Modeling of Buildings and HVAC Systems" (BRAČ 1)		
14:30-15:00	Keynote: Nuno Vasco Lopes- "From Smart to Trustworthy: Embedding Secure AI and Governance in Next-Generation Smart Cities" (BRAČ 1)		
15:00-15:30	Coffee Break		
15:30-17:00		IoT6: Session on Blockchain applications and Cybersecurity solutions for IoT Systems	Keynote: Marcos Eduardo Gonzalez Trevizo "Lessons and Innovation for Future Urban Planning in Emerging Cities" (BRAČ 1) BD3: Advanced Materials and Technologies for Thermal Management
17:30	GUIDED TOUR		
21:00	CONFERENCE DINNER AND COCKTAILS		
June 20, 2025, Hotel Elaphusa, Bol (island of Brač)			
TIME/HALL	VIS	KORČ ULA	BRAČ 1
10:30	REGISTRATION		
9:00-10:30	SDEN1: Smart Electrical Networks and AI Integration	SC2: Smart City - Aquatic Applications	MLE: Machine Learning and Statistics in Electronics
10:30-11:00	Keynote: M. Santamouris- "Climate Change affects seriously the Cognitive Performance of Students. Recent Developments and Potential Solutions" (BRAČ 1)		
11:00-11:30	Coffee Break		
11:30-13:00	H1: Artificial Intelligence and Advanced Technologies in Healthcare	SC3: Smart City - Environmental Perspective	Tutorial: Tutorial on Human Exposure to Nonionizing Radiation
13:00-14:00	Lunch		

Timetable B: SpliTech2025 Program

June 16, 2025, University of Split, FESB, Split		
TIME/HALL	A105	B420
08:00	REGISTRATION	
09:00-10:30	P1: Energy Modeling	<p style="text-align: center;">Workshop: High Performance Computing Marko Hrženjak, University Computing Centre of the University of Zagreb</p>
10:30-11:00	Coffee Break	
11:00-11:30	Keynote: Levent Sevgi - "From Engineering Electromagnetics to Electromagnetic Engineering: Teaching/Training Next Generations" (A100)	
11:30-13:00	P2: Engineering Modeling	
13:00-14:00	Lunch	
14:00-14:30	Keynote: Lei Xing - "AI-enabled data-driven approaches for circular chemical economy research" (A100)	<p style="text-align: center;">Workshop: How Large Language Models Work? Maja Braović, University of Split, FESB</p>
14:30-16:00	P3: Building Efficiency	
16:00-16:30	Coffee Break (RFID P - Special Poster Session: "RFID/IoT Research Projects: Hardware and Software Solutions in Focus")	
16:30-18:00		
June 17, 2025, University of Split, FESB, Split		
TIME/HALL	A105	B420
08:30	REGISTRATION	
08:30-10:00	IoT1: Symposium on Internet of Things - General Track	<p style="text-align: center;">Workshop: Machine Learning Applications on the Supek Supercomputer Nenad Mijić, University Computing Centre of the University of Zagreb</p>
10:00-10:30	Keynote: Dubravko Čulibrk - "AI-disrupted Medicine and How to Apply It" (A100)	
10:30-11:00	Coffee Break	
11:00-13:00	<p>Opening Ceremony which includes the Plenary Speech: Gaetano Marrocco (IEEE CRFID Distinguished Lecturer) - "Wireless Identification and Sensing without Conductors: The Laser-Induced Graphene Technology for Eco-Friendly IoT"</p> <p>Mat Santamouris - "Can we Cool our cities? Recent developments on Urban Heat Mitigation Technologies" (A100)</p>	
13:00-14:00	Lunch	
14:00-14:30	Keynote: Giuseppe Marco Tina, "Harnessing the Sun: Technical and Economic Insights on Floating Photovoltaic Systems and Their Aquatic Integration" (A100)	<p style="text-align: center;">Workshop: Password Security Analysis Toni Perković, University of Split, FESB</p>
14:30-16:00	IoT2: Workshop on IoT and AI for sustainable and smart services in healthcare - PART I	
16:00-18:00		
June 18, 2025, University of Split, FESB, Split		
TIME/HALL	A105	
08:30	REGISTRATION	
09:00-09:30	<p style="text-align: center;">AIoTwin Keynote 3</p> <p>Anwitaman Datta (De Montfort University & NTU Singapore) - On building trustworthy decentralized infrastructure: Experiences from the Blockchain I/O project (Big Hall)</p>	
09:30-11:00	IoT3: Workshop on IoT and AI for sustainable and smart services in healthcare - PART II	
11:00-11:30	Coffee Break	

11:30-13:00	
13:00-14:00	Lunch
June 19, 2025, Hotel Elaphusa, Bol (island of Brač)	
TIME/HALL	ŠOLTA
08:00	REGISTRATION
09:00-10:30	EMB1: Energy modelling of public buildings and HVAC systems for energy & comfort performance assessment and near real-time control
10:30-11:00	Coffee Break
11:00-11:30	Keynote: Sima Noghianian (IEEE APS Distinguished Lecturer) - "Empowering Connectivity: Wearable Antennas for Wi-Fi and 5G Applications" (BRAČ 1)
11:30-13:00	EMB2: Energy modelling of buildings and HVAC systems for energy & comfort performance assessment and near real-time control - PART I
13:00-14:00	Lunch
14:00-14:30	Keynote: Roberto Garay-Martinez - "Energy Modeling of Buildings and HVAC Systems" (BRAČ 1)
14:30-15:00	Keynote: Nuno Vasco Lopes - "From Smart to Trustworthy: Embedding Secure AI and Governance in Next-Generation Smart Cities" (BRAČ 1)
15:00-15:30	Coffee Break
15:30-17:00	EMB3: Energy modelling of buildings and HVAC systems for energy & comfort performance assessment and near real-time control - PART II
17:30	GUIDED TOUR
21:00	CONFERENCE DINNER AND COCKTAILS

International Symposium on Internet of Things organizer: L. Patrono
International Symposium on RFID, Electromagnetics, and Electronics for IoT Devices: The Hardware Side of IoT organizer: L. Catarinucci
International Symposium on Statistics and Machine Learning in Electronics organizers: M. Ivanova , G. Bogdanova, C.-Z. Kertesz
Special Session on Energy Modeling of Buildings and HVAC Systems for Energy and Comfort Performance Assessment and Near Real-Time Control organizers: R. Gray-Martinez, J. L. Hernandez, B. Arregi
Special Session on Life Cycle Assessment, Digital Solutions, and Sustainable Practices in Building Design and Construction organizers: P. Fokaides, E. Giama
Special Session on Humanized Computing: Citizen Science, Co-creation, and Emerging Technologies for Human-Centric Decisions organizers: D. C. Mansilla, D. L. de Ipiña
Special Session on Decarbonizing Buildings and Enhancing Resilience: Strategies and Innovations for a Future Sustainable Built Environment organizers: F. Ascione, A. Papadopoulos, S. Nižetić, M. Arici, P. Fokaides, M. E. Gonzalez Trevizo, P. Oclon
Special Session on Smart Distributed Electrical Network: Opportunities and Challenges for Integration of Renewable Energy Systems organizers: M. L. Kolhe, N. J. Johannesen
Special Session on Artificial Intelligence of Things and Edge Intelligence organizers: I. P. Žarko, G. Ježić, M. Kušek
Tutorial on Human Exposure to Nonionizing Radiation organizers: D. Poljak, M. Cvetković
Workshop: Meet the editors / Speakers: M. Santamouris, A. Papadopoulos, F. Ascione/ Moderator: Sandro Nižetić

Timetable C: IoT Day, SpliTech2025 Program		
June 16, 2025, IoT Day, University of Split, FESB, Split		
TIME/HALL	B525	Faculty Hall / A102
08:00	REGISTRATION	
08:30-10:30	NVIDIA - Fundamentals of Deep Learning Dr. Ilija Kamenko, The Institute for Artificial Intelligence Research and Development of Serbia	Career Speed Dating (Faculty Hall)
10:30-11:00		Exhibition Session (Faculty Hall)
11:00-13:00		Company Lectures (A102)
13:00-14:00	Lunch	
14:00-16:00	Edge-Aware Time Series Analysis with Deep Learning Nikola Marković, Mladen Milić, Dr. Milovan Medojević, The Institute for Artificial Intelligence Research and Development of Serbia	Career Speed Dating (Faculty Hall)

Timetable D: SpliTech2025 Program	
June 16, 2025, University of Split, FESB, Split	
TIME/HALL	Big Hall
08:00	REGISTRATION
09:00-10:30	3rd AloTwin Summer School: OPENING Ivana Podnar Žarko (UNIZG-FER)
	AloTwin Keynote 1 Tomislav Grgić (Ericsson Nikola Tesla) - IoT and AI-Based Network Enablers for Evolution Towards Future 6G Technologies
	AloTwin Keynote 2 Ivan Marković (UNIZG-FER) - A Gentle Introduction to Human-Robot Interaction
10:30-11:00	Coffee Break
11:00-12:00	Tutorial 1 Myeongho Jeon (EPFL) - Tutorial on Learning Under Distribution Shifts
12:00-13:00	Tutorial 2 Ali Ganbarov (TU Berlin) - Workload Balancing for Distributed Multi-Object Tracking on Multi-Camera
13:00-14:00	Lunch
14:00-14:30	Keynote: Lei Xing - "AI-enabled data-driven approaches for circular chemical economy research" (A100)
14:30-16:00	AloT1: Special session on Artificial Intelligence of Things and Edge Intelligence - PART I
16:00-16:30	Coffee Break (RFID P - Special Poster Session: "RFID/IoT Research Projects: Hardware and Software Solutions in Focus")
16:30-18:00	AloT2: Special session on Artificial Intelligence of Things and Edge Intelligence - PART II
June 17, 2025, University of Split, FESB, Split	
TIME/HALL	Big Hall
08:30	REGISTRATION
08:30-10:00	Hands-on-session 1 Ivan Čilić, Ana Petra Jukić, Katarina Vuknić (UNIZG-FER) - Orchestrating Hierarchical Federated Learning Pipelines with AloTwin Middleware
10:00-10:30	Keynote: Dubravko Čulibrk - "AI-disrupted Medicine and How to Apply It" (A100)
10:30-11:00	Coffee Break
11:00-13:00	Opening Ceremony which includes the Plenary Speech: Gaetano Marrocco (IEEE CRFID Distinguished Lecturer) - "Wireless Identification and Sensing without Conductors: The Laser-Induced Graphene Technology for Eco-Friendly IoT" Mat Santamouris - "Can we Cool our cities? Recent developments on Urban Heat Mitigation Technologies" (A100)
13:00-14:00	Lunch
14:00-15:00	Tutorial 3 Anna Lackinger (TU Vienna) - Time Series Prediction
15:00-16:30	Hands-on-session 2 Anh Le Tuan (TU Berlin) - Building a Semantic Swarm of Edge Intelligence

June 18, 2025, University of Split, FESB, Split	
TIME/HALL	Big Hall
08:00	REGISTRATION
09:00-09:30	AloTwin Keynote 3 Anwitaman Datta (De Montfort University & NTU Singapore) - On building trustworthy decentralized infrastructure: Experiences from the Blockchain I/O project
09:30-11:00	Tutorial 4 Fatemeh Rahimian (RISE) - Model Compression and Pruning Techniques for AI on IoT Devices
11:00-11:30	Coffee Break
11:30-12:30	Tutorial 5 Ivan Kralj (UNIZG-FER) - Semi-Decentralized Training of Spatio-Temporal Graph Neural Networks for Traffic Prediction
12:30-13:00	3rd AloTwin Summer School: CLOSING
13:00-14:00	Lunch

Timetable E: Digital Plan – Civil Protection Plan Digitalization through Internet of Things Decision Support System based Platform			
June 19, 2025, Hotel Elaphusa, Bol (island of Brač)			
TIME/HALL	HVAR		
08:50-09:00	REGISTRATION		
09:00-10:30	<table border="1"> <tr> <td> <p>Civil Protection Plan Digitalization through Internet of Things Decision Support System based Platform</p> <p>Presentation of DP project (goals, activities, results etc.; emphasis on IoT sensors, pilot deployment and IoT EDSS platform)</p> </td> <td> <p>Project presentation as a part of SpliTech 2025 Program International Conference on Smart and Sustainable Technologies 2025</p> <p>FESB</p> <p>Project partners are welcome</p> </td> </tr> </table>	<p>Civil Protection Plan Digitalization through Internet of Things Decision Support System based Platform</p> <p>Presentation of DP project (goals, activities, results etc.; emphasis on IoT sensors, pilot deployment and IoT EDSS platform)</p>	<p>Project presentation as a part of SpliTech 2025 Program International Conference on Smart and Sustainable Technologies 2025</p> <p>FESB</p> <p>Project partners are welcome</p>
<p>Civil Protection Plan Digitalization through Internet of Things Decision Support System based Platform</p> <p>Presentation of DP project (goals, activities, results etc.; emphasis on IoT sensors, pilot deployment and IoT EDSS platform)</p>	<p>Project presentation as a part of SpliTech 2025 Program International Conference on Smart and Sustainable Technologies 2025</p> <p>FESB</p> <p>Project partners are welcome</p>		
10:30-11:00	Coffee Break		
11:00-11:45	Press conference		
11:45-13:00	WP1 status Progress on WP1 activities, WP1 discussion (all partners) - GAL MOLISE, FESB, CA'FOSCARI		
13:00-14:00	Lunch		
14:00-15:15	WP2 status Progress on WP2 activities, WP2 discussion (all partners) - GAL MOLISE, FESB, External experts in the field of civil protection		
15:15-15:45	Introduction of WP3 activities, WP3 discussion (all partners) - GAL MOLISE, RERA		
17:30	Guided tour Partners interested in the guided tour are welcome to join!		
20:00	Social dinner		
June 20, 2025, Hotel Elaphusa, Bol (island of Brač)			
TIME/HALL	HVAR		
09:30-09:45	REGISTRATION		
09:45-10:00	Management and project coordination - Adolfo Colagiovanni, Project manager LP		
10:00-10:15	Financial management - Roberto D'Amico, Financial manager LP		
10:15-10:30	Project Communication - Communication manager PP2 AGRRA		
10:30-11:00	Coffee Break		
11:00-11:30	Analysis of third period - SC members		
11:30-12:00	Deliverable execution - SC members		
12:00-12:30	Critical tasks and deviations - SC members		
12:30-13:00	AOB and main conclusion - LP project manager		
13:00-14:00	Lunch		

COMMITTEE

1. TECHNICAL PROGRAM CHAIR MESSAGE



Joel J.P.C. Rodrigues

National Institute of Telecommunications (Inatel), Brazil;
Instituto de Telecomunicações, Universidade da Beira Interior,
Portugal



Sandro Nižetić

University of Split, Croatia

Dear participants of the SpliTech2025 Conference

It is our pleasure to welcome you again to the rounded 10th edition of SpliTech conference, special welcome to the newcomers. Ten years of hard and dedicated work are behind us, we hope that we have managed to justify our existence, and we are very much grateful for your support all these years. SpliTech is continuously growing, making an impact and it's being recognized by research community as valuable international event. The key issues that SpliTech event tackles are related to the global population challenges which could be solved by smart and sustainable engineering solutions. The main population problems are related to the energy security, food security, waste issue and sustainability aspect in many areas of engineering. Digitalization and smart approaches are allowing huge potentials to enable the key advancements in the previously mentioned fields. To ensure previous, the close collaboration between all engineering professions is the key. The new knowledge presented in a several days SpliTech 2025 event will drive information exchange between all important parties involved in society development by technological advancements such as academia members, professionals, industrial experts, etc. We are proud that we had the opportunity to take this important role as TPC chairs and to ensure quality conference program with popular topics related to, Smart City / Environment, Energy and Engineering Modelling and eHealth. We have ensured quality and rich conference program in different events that will ensure valuable discussions and new networking opportunities between all interested parties. Our main goal was to host high quality event followed with address of all important topics for global population, i.e., to "Make life easier" as the main SpliTech conference slogan directs.

Special thanks go to our main conference Chairs prof. Dr. Agis Papadopoulos and prof. Dr. Diego López-De-Ipiña González-De-Artaza, the Plenary, Keynote and Invited speakers, technical program committee, session chairs, reviewers and finally authors. Also special thanks to our sponsors and their support to make this event on the high level. In the end, we would like to thank the entire organization team for their efforts and devoted time!

The 10th International Conference on Smart and Sustainable Technologies (SpliTech 2025), co-sponsored by the IEEE Communications Society, will be held in in the beautiful historic city of Split and Bol (Island of Brač). Therefore, we wish to welcome you to the SpliTech 2025 and we are sure that you will enjoy your time during the conference!

Two handwritten signatures in blue ink. The first signature is for Joel J.P.C. Rodrigues and the second is for Sandro Nižetić.

Joel J.P.C. Rodrigues and Sandro Nižetić
SpliTech 2025 TPC Chairs

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AGIS M. PAPAODOPOULOS, General co-chair

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SANDRO NIŽETIĆ, TPC Chair

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LUIGI PATRONO, Industry Workshop co-chair

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SUDEEP TANWAR, Publicity chair

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NUNO VASCO LOPES, Publicity chair

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Hrvoje Gotovac, University of Split, Croatia

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Ivan Marasović, University of Split, Croatia

Sven Maričić, UniPu/Science-Technology Institute VISIO, UniRi/

MedRi, Croatia

Snježana Mardešić, University of Split, Croatia

Gaetano Marrocco, Università di Roma "Tor Vergata", Italy

Maja Matijašević, University of Zagreb, Croatia
 Gerardo Maria Mauro, University of Sannio, Italy
 Gianluca Mazzini, University of Ferrara & LepidaSpA, Italy
 Milovan Medojević, The Institute for AI Research and Development, EnergyPulse D.O.O, Serbia
 Massimo Merenda, Austrian Institute of Technology (AIT), Austria
 Luciano Mescia, Politecnico di Bari, Italy
 Predrag Mišević, University of Split, Croatia
 Dragiša Mišković, The Institute for AI Research and Development, Serbia
 Tonči Modrić, University of Split, Croatia
 Marina Mongiello, Politecnico di Bari, Italy
 Tariq Muneer, Edinburgh Napier University, UK
 Andrea Motroni, University of Pisa, Italy
 Mirco Muttillio, Delft University of Technology, Netherlands
 Sandro Nižetić, University of Split, Croatia
 Andreas Ochsner, Griffith University, Australia
 Roger Owen, Swansea University, United Kingdom
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SPEAKERS



Gaetano Marrocco
University of Roma Tor Veragata, Italy

Wireless Identification and Sensing without Conductors: The Laser-Induced Graphene Technology for Eco-Friendly IoT

Laser-Induced Graphene (LIG) is a transformative technology for the fabrication of conductive materials, providing a sustainable alternative to traditional additive and subtractive techniques. By directly converting polymer precursors into graphene patterns through laser engraving, LIG drops the need for metallic conductors, solvents, or complex processes, enabling the creation of recyclable and disposable devices.

This presentation focuses on the challenges of integrating LIG into Radiofrequency Identification (RFID) systems, highlighting its potential for conductor-free antennas on plastic precursors that not only reduce environmental impact but also allow for advanced designs, including heterostructures with non-homogeneous surface properties, all fabricated through the same scalable process.

Key aspects covered include the electromagnetic modeling of LIG-based antennas, experimental validation, mechanical test and their versatile applications. Examples comprise smart packaging with chemical sensing capability, epidermal antennas for wearable health monitoring, and smart prostheses with engraved wireless devices for the continuous post-surgery screening.

Biography

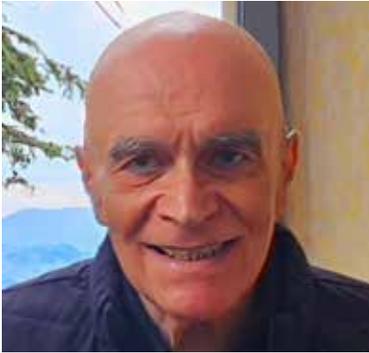
Gaetano Marrocco Laurea in Electronic Engineering and Ph.D. in Applied Electromagnetics from the University of L'Aquila, Italy, in 1994 and 1998, respectively. Researcher at the University of Roma Tor Vergata in 1994-2014. Associate Professor of Electromagnetics in 2013-2017. Guest Professor at the University of Paris-est Marne la Vallée in 2015, and Full Professor at the University of Roma Tor Vergata since 2018. Since 2018 to 2024 he served as Director of the Medical Engineering School and currently is the Deputy Director of the Department of Civil engineering and Computer Science Engineering.

The first phase of his research career was devoted to the modelling and designing structural broadband and ultra-wideband antennas for Satellite (ESA, ASI), Avionic and Naval (Leonardo) communications. Since 2003, he has been investigating sensor-oriented miniaturized antennas for Biomedical Engineering and Radiofrequency Identification (RFID), contributing to the move from the RF labelling of objects to the passive sensor networks in the Internet of Things era. He carried out pioneering research on bodycentric battery-less wireless sensors concerning textile RFID antennas, tattoo-like sensors (flexible and stretchable epidermal electronics), and radio-sensors embedded inside implantable prostheses.

He served as Associate Editor for the IEEE Antennas and Wireless Propagation Letters, IEEE Journal of Radiofrequency Identification and member of the IEEE Antennas and Propagation Society Awards committee. Currently he is track Editor for the IEEE Journal of Flexible Electronics. Moreover, he is the chair of the Italian delegation URSI Commission D Electronics and Photonics. He was the chair of the Local Committee of the V European Conference on Antennas and Propagation (EUCAP-2011), TPC chair of the 2012 IEEE-RFID TA in Nice, France, TPC track-chair of the 2016 IEEE Antennas and Propagation Int. Symposium, TPC track-chair of IEEE-RFID 2018 USA and General co-Chair of the IEEE Flexible, Printable Sensors and Systems (FLEPS) in Tampere (Finland) 2024.

Prof. Marrocco is the director of the Pervasive Electromagnetics Lab (pervasive.ing.uniroma2.it) and the co-founder and president of the University spin-off RADIO6ENSE (www.radio6ense.com), which is active in the short-range electromagnetic sensing for the Industrial Internet of Things, Smart Manufacturing, Automotive BioEngineering, and Pharma.

He is listed in the PLOS ranking of Top 1.5% Scientists Worldwide (source Univ. Stanford, 2024) and in the first three places on ScholarGPs for worldwide RFID impact 2024.



Matt Santamouris
University New South Wales, Australia

Can we Cool our cities? Recent developments on Urban Heat Mitigation Technologies

Overheating of the Built Environment is the most documented phenomenon of climate change impacting the human life in many ways. There are more than 13,000 cities exhibiting serious problems of higher urban temperatures in the world. The magnitude of overheating depends strongly on the local climatic and local landscape conditions. Studies have shown that the average magnitude of the intensity of urban overheating in Asian and Australian cities is close to 4.1°C, while the corresponding value for 110 European cities is close 6°C. Actually, the magnitude of the urban overheating may be as high as 11°C in some cities, and it gets its maximum during anticyclonic weather conditions while the landscape, land use and the morphological and construction characteristics of cities influence highly the magnitude of overheating.

This lecture will present the most recent developments on the magnitude and the characteristics of the urban overheating and the potential synergies with the global climatic change. It will analyse the latest qualitative and quantitative data on the impact of higher urban temperatures on the building's energy supply and demand, heat related mortality, morbidity and wellbeing, human productivity, survivability of low-income population and environmental quality of cities. The impact of the actual urban overheating as well as of the expected future increase of the urban temperature, on the energy consumption of buildings and their environmental quality is quantified and analysed. The challenges around the dramatic increase of the cooling energy demand in the developing countries and the corresponding impact on environment and economy are presented in detail. Proper adaptation techniques aiming to respond to the overheating challenge, decrease the energy consumption of buildings, improve environmental quality and produce added value to the local economies are analysed. The combined impact of advanced adaptation and mitigation technologies is depicted.

It will present and describe the state of the art on the development of innovative mitigation materials, advanced urban greenery, heat dissipation and

evaporative techniques, as the main mitigation and adaptation technologies to offset the impact of urban overheating.

Recently developed, efficient heat mitigation technologies implemented in large scale urban projects, able to decrease the peak ambient temperature of cities up to 5 C, will be presented. The monitored energy and environmental performance of innovative heat mitigation technologies like super cool materials for buildings and urban structures, thermally adapted greenery combined with anthropogenic heat reduction techniques and soil humidity boosting technologies, are presented.

Results from large scale urban heat mitigation projects show that implementation of the innovative mitigation technologies can reduce the cooling energy consumption of buildings up to 40 %, decrease the concentration of harmful pollutants up to 50 %, reduce heat related mortality up to 35 % and improve the survivability levels of vulnerable urban population considerably. Finally, it will present the main future challenges related to urban overheating and proposes a specific research agenda to alleviate and counterbalance its impact on human life.

Biography

M. Santamouris is a Scientia, Distinguished, Professor of High Performance Architecture at UNSW, and past Professor in the University of Athens, Greece. Visiting Professor : Cyprus Institute, Metropolitan University London, Tokyo Polytechnic University, Bolzano University, Brunel University, Seoul University National University of Singapore, and UITM Univ Malaysia. Past President of the National Center of Renewable and Energy Savings of Greece. Editor in Chief of the Energy and Buildings Journal, Past Editor in Chief of the Advances Building Energy Research, Associate Editor of the Solar Energy Journal, E-Prime, Journal of Low Carbon and Sustainable Energy, and Member of the Editorial Board of 24 Journals. Editor of the Series of Book on Buildings, published by Earthscan Science Publishers. Editor and author of 20 international books published by Elsevier, Earthscan, Springer, etc. Author of 448 scientific articles published in journals. Reviewer of research projects in 29 countries including USA, UK, France, Germany, Canada, Sweden, etc.

Ranked as the top world cited researcher in the field of Building and Construction by the Stanford University ranking system, for 2019-2022. Highly Cited Researcher in the Clarivate ranking for 4 continuous years. Ranked as no 451 researcher in the world in all scientific disciplines in the list prepared by Stanford University in 2021 for the 200000 more influential researchers. He has received many international awards.



Roberto Garay-Martinez
University of Deusto, Spain

Energy Modeling of Buildings and HVAC Systems

Buildings are built to shelter human activity. Over time, they have grown from basic structures to complex systems where up to thousands of people interact with technical systems and expect the highest possible comfort standards. This has led to a situation where a large share of our footprint on earth is linked to buildings. And particularly to their energy use.

We are developing concepts such as Smart Buildings that are key to enable the potentials of buildings as flexible loads in our energy systems, allowing to maximize the usage of Renewable Energy. This is built on top of other trends such as Nearly Zero Energy Buildings, as well as an increasing awareness and regulation towards Indoor Air Quality and Thermal Comfort. This Lecture will review the conflicting goals of all these trends, current research approaches to optimal HVAC control and its integration with energy grids. Special attention will be paid to real-life implementations, and potentialities and limitations for large scale deployment of these technologies.

Biography

I have been a building energy researcher since 2008. Currently, I am Principal Investigator of the Deusto Sustainable Research Group. During my career, I have performed numerical and experimental research in Heat Transfer, Renewable Energy Systems, Heating Ventilation and Air Conditioning, Control systems, District Energy Systems, etc, always with my focus in Building Energy performance.

Lately, I have been particularly focused on data-driven energy analysis, building model calibration, and their potential in Measurement and Verification (M&V) of energy performance through energy management platforms.

I have a strong background in experimental research, where I have experimental facilities and designed and implemented many full scale experimental works. This knowledge is key in my most recent research in data-driven models and applications. If you understand buildings from a system perspective, you can model these.

Throughout my career, I have witnessed significant changes in building energy, such as the implementation of energy codes, the rise of ventilation technologies, heat recovery, heat pumps, solar systems, rapid digitalization, and the integration of data analytics. I am curious about what comes next.



Sima Noghanian
CommScope Ruckus Networks, Canada

Empowering Connectivity: Wearable Antennas for Wi-Fi and 5G Applications

Wireless connectivity plays a major part in our daily lives. Wireless Local Area Network (WLAN), mostly operating through Wi-Fi technology, is one of the major technologies to provide this connectivity. 5G is another technology that promises a significant increase in data transmission speed. The goal of this talk is to highlight some of the aspects of the evolution of wearable antennas designed for applications in Wi-Fi and 5G, emphasizing their significance in enabling continuous, reliable connectivity for various wearable devices utilized in diverse applications and industries.

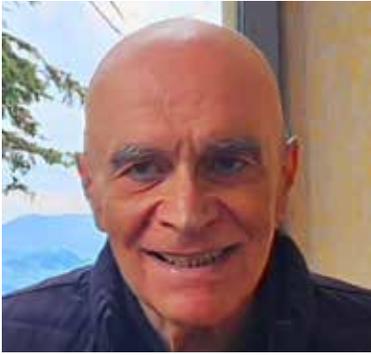
With the focus on wearable wireless devices, it is desired to have a direct connection to networks such as Wi-Fi or 5G networks. Therefore, there is a need for wearable antennas in the WiFi or 5G bands (especially the sub 6 GHz band) that can seamlessly be integrated into clothing. Such antennas should be small. However, the small antennas usually have omnidirectional patterns, and their input impedance may be affected significantly by the lossy human tissue in their vicinity. On the other hand, the radiation toward the body can cause a high Specific Absorption Rate (SAR), requiring a reduction in the input power to comply with the standard SAR levels.

In addition, wearable antennas must be lightweight and flexible. There are multiple options for flexible materials that may be considered. Other conditions specific to wearable antennas are being low-profile, compact, and efficient. Some of the factors that need careful consideration are the performance of the antennas under bending, crumpling, and stretching. The other factors are the cost, availability, washability, and endurance under extreme and harsh conditions. Some of the wearable antennas may be integrated as parts of the clothing such as buttons or zippers, while others may be integrated into the surface area of the clothes. This talk is an exploration of wearable antennas for 5G and Wi-Fi, highlighting their pivotal role in enabling ubiquitous and reliable wireless connectivity.

Biography

Sima Noghianian is currently a Distinguished Hardware Engineer at CommScope Ruckus Networks. She is also an Antenna/RF consultant with StrokeDx and Neuspera Medical Inc. Dr. Noghianian received a Ph.D. from the University of Manitoba in 2001, and a Post-Doctoral Fellowship from the Natural Sciences and Engineering Research Council of Canada which she took at the University of Waterloo. From 2002 to 2018 she served as an Electrical Engineering faculty in: the Sharif University of Technology, Iran (2002), the University of Manitoba, Canada (2003-2008), and the University of North Dakota, USA (2008 – 2018). She also served as the Chair of the Electrical Engineering Department at the University of North Dakota (2014 – 2016).

She was an Electromagnetic Application Engineer with PADT Inc. (2019 – 2020) and a Principal Antenna Design Engineer at Wafer LLC (2020 – 2021). Dr. Noghianian is a senior member of IEEE, a fellow of the Applied Computational Electromagnetics Society (ACES), and a senior member of URSI and USNC-URSI Commissions Band K. Dr. Noghianian currently serves as the Associate Editor of IEEE Transactions on Antennas and Propagation, IEEE Open Journal of Antennas and Propagation, IEEE Antennas and Propagation Magazine, IET Microwave, Antennas and Propagation, and Frontiers in Antennas and Propagation. She is an Area Editor of Elsevier International Journal of Electronics and Communications. She is an elected member of the IEEE Antennas and Propagation Society (AP-S) Administration Committee for 2023-2025 and a Distinguished Lecturer of IEEE AP-S 2024-2026. She serves as the chair of the AP-S Technical Committee on Antenna Measurement (TCAM).



Matt Santamouris
University New South Wales, Australia

Climate Change affects seriously the Cognitive Performance of Students. Recent Developments and Potential Solutions

Cognitive Performance refers to the Mental Processes involved in Perception, Learning, Memory, Understanding, Reasoning, Judgement, Intuition and Language. Regional and Global Climate Change increase the ambient temperature, the length of the hot spells and the frequency of heat waves. Forecasts show that the ambient temperature may increase between 2 to 5 C, especially in cities. Research has documented the brain sensitivity to temperature. Important research is carried out to document the short- and long-term impact of high temperatures on the cognitive performance of humans.

Exposure to high temperatures affects and lowers significantly the cognitive performance of students. Short term laboratory studies have proposed deterministic relations between the exposure temperature and different forms of cognitive activities proposing an optimum operative temperature, independently of the other environmental characteristics and psychological and physiological parameters.

Human adaptability studies have shown that instead of a single optimum temperature there is a plateau of temperatures offering high cognitive performance. Humans possess a 'cognitive reserve' related to psychological and physiological adaptation that assures a high cognitive function, over which the cognitive performance declines fast. The cognitive performance depends, among others, on the complexity of the task as different parts of the human brain deals with different types of cognitive activities. Thus, under the same temperature the cognitive performance of students varies as a function of the task.

Students who experience higher temperatures during the school year before their exams exhibit reduced learning. Studies on the cumulative impact of high temperatures shown that a potential exposure during the last 4 years affects significantly the cognitive performance of students.

Air Conditioning of classrooms when is combined with proper ventilation can improve the cognitive performance of students. However, the optimum temperature of the students' performance depends on the heat adaptability

of the performers. Exposure to high temperatures has a larger impact to poor minorities and low income cooling dominated countries, mainly because of the much higher exposure to high temperatures and the lack of heat adaptation policies. Given the important increase of the ambient temperature caused by the global and local climate change, it is estimated that the future cognitive performance of students may decrease substantially if adaptation measures are not taken.

Biography

M. Santamouris is a Scientia, Distinguished, Professor of High Performance Architecture at UNSW, and past Professor in the University of Athens, Greece. Visiting Professor : Cyprus Institute, Metropolitan University London, Tokyo Polytechnic University, Bolzano University, Brunel University, Seoul University National University of Singapore, and UITM Univ Malaysia. Past President of the National Center of Renewable and Energy Savings of Greece. Editor in Chief of the Energy and Buildings Journal, Past Editor in Chief of the Advances Building Energy Research, Associate Editor of the Solar Energy Journal, E-Prime, Journal of Low Carbon and Sustainable Energy, and Member of the Editorial Board of 24 Journals. Editor of the Series of Book on Buildings, published by Earthscan Science Publishers. Editor and author of 20 international books published by Elsevier, Earthscan, Springer, etc. Author of 448 scientific articles published in journals. Reviewer of research projects in 29 countries including USA, UK, France, Germany, Canada, Sweden, etc.

Ranked as the top world cited researcher in the field of Building and Construction by the Stanford University ranking system, for 2019-2022. Highly Cited Researcher in the Clarivate ranking for 4 continuous years. Ranked as no 451 researcher in the world in all scientific disciplines in the list prepared by Stanford University in 2021 for the 200000 more influential researchers. He has received many international awards.



Liping Wang
University of Wyoming, USA

Controlled Environment Agriculture, Community, and Sustainability

As a potential disruptive agriculture system to open field agriculture, indoor agriculture or controlled environment agriculture (CEA) grows crops year-round under controlled indoor environment conditions. CEA provides food resilience, diversifies food sources, offers the ability to grow food under the uncertainties of climate conditions, and protects crops from dramatically increased natural and anthropogenic disasters. While fast-growing, the CEA industry is still in its infancy. The energy-intensive nature and high carbon footprints of the industry make CEA, especially vertical indoor farming, difficult to be sustainable.

In her presentation, Dr. Wang reviews her journey in CEA and shares the future indoor agriculture outlook from a building science perspective. She first presents community engagement and CEA industry partnership through case studies. She then discusses a dynamically integrated modeling method for CEA and its significance for improving the design and operation of complex indoor agriculture systems. Evapotranspiration represents a combination of evaporation from substrates and transpiration of plants and plays an essential role in accurately predicting water and energy use in CEA. She presents the efforts of developing a new module for Controlled Environment Agriculture integrating energy, evapotranspiration, and crop growth models in the whole building energy simulation software Energy-Plus and using the module to facilitate CEA design and operation. After that, she discusses electricity flexibility between CEA and power grid/microgrid. Develop optimal control strategies for electricity flexibility based on the interaction between CEA and power grids. These strategies are crop-specific for LED lighting and mechanical systems to stabilize energy grid. At the end, she highlights challenges and identifies new collaborative research opportunities to achieve sustainable, resilient, and scalable CEA. These technologies include distributed indoor agriculture, AI-enabled monitoring and control, engineered microbiomes and plants, and the roles of CEA in community infrastructure planning and design.

Biography

Dr. Liping Wang is an Associate Professor in Civil and Architectural Engineering at the University of Wyoming. She is the Director of the Center for Controlled Environment Agriculture at UW and leads the UW efforts to advance controlled environment agriculture (CEA) research, education, and outreach. Her research interests are in sustainable controlled environment agriculture, building energy efficiency, and fault detection and diagnosis for building systems. She earned her Ph.D. degree in Building Technology at the National University of Singapore. She did her postdocs at the Welsh School of Architecture at Cardiff University and Building Simulation Group at Lawrence Berkeley National Laboratory before she joined UW as an Assistant Professor in 2013. She was a visiting professor at Massachusetts Institute of Technology and Purdue University.

She is a member of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and International Building Performance Simulation Association (IBPSA). She is the secretary of ASHRAE TC 7.5 Smart Building System and vice chair for ASHRAE MTG.CEA. She is the principal investigator for research projects funded by ASHRAE, NSF, USDA, and CEA industry. In 2020, she was honored to receive the NSF CAREER award for quantifying the effects of indoor greenery systems on building energy use and thermal comfort. She currently leads the U.S. side for the U.S.-Netherlands collaboration for the "Greenhouses in Transition" program, sponsored by the Foundation for Food and Agriculture Research (FFAR) and the Dutch Research Council (NWO).



Lei Xing
University of Surrey, UK

AI-enabled data-driven approaches for circular chemical economy research

Artificial intelligence (AI) has emerged as a transformative tool in scientific and engineering research, offering unprecedented capabilities for improving both process efficiency and innovation. AI-driven algorithms facilitate the rapid analysis of large-scale datasets, enabling the identification of complex patterns and the prediction of outcomes that may not be discernible through traditional methods. This functionality is particularly advantageous in the optimisation of chemical processes and systems, where AI contributes to performance enhancement, cost reduction and sustainability improvement. The integration of data-driven approaches with physics-based modelling, alongside AI-based adaptive control, significantly enhances process efficiency and operational performance. By predicting short-term renewable energy availability, AI-driven adaptive optimisation strengthens the coupling of chemical processes with renewable energy systems, which is crucial for achieving low-carbon futures. A few examples in circular economy will be given to explore the potential of AI in chemical engineering research, focusing on the AI-enabled research in fuel cells, hydrogen production and carbon capture and utilisation.

Biography

Dr. Lei Xing received his PhD degree from Newcastle University, then worked as postdoctoral research associate in several world-leading universities in the UK and USA. He is currently a Lecturer at School of Chemistry and Chemical Engineering, the University of Surrey. Dr. Xing's research interest lies in the sustainable growth of chemical and energy industries via decarbonation and AI-based digitalisation. He established reputation in modelling advanced chemical and electrochemical processes and systems for green energy and carbon capture and utilisation. The approaches include Multiphysics modelling, AI-enabled adaptive optimisation and control, techno-economic analysis (TEA) and life cycle assessment (LCA). He is a Chartered Member of IChemE, Editorial Board Members of several highly visible journals. He is the top 2% scientist in Energy field, authored 130+ journal papers with 4400+ citations.



Agis M. Papadopoulos
Aristotle University of Thessaloniki, Greece

The energy-water nexus: A challenge for the Mediterranean region

The Mediterranean region faces unique challenges at the intersection of water supply and energy due to its arid climate, population growth, and high energy dependency. Water scarcity is a persistent issue, exacerbated by climate change, while energy-intensive solutions like desalination and wastewater treatment are becoming increasingly necessary.

Main drivers of this critical development are: Climate change & water scarcity, a rising water demand due to population growth and tourism, whilst the resources are limited and dwindling, water intensive agriculture, aging infrastructure and water losses and political and economic constraints.

There is a pressing need for adopting and implementing strategies for a sustainable and energy efficient water supply. These include but are not limited to: Expanding efficient and smart water infrastructure technologies, enhancing water reuse & recycling, promoting decentralized water harvesting and storing solutions, implementing energy efficient water desalination technologies and promoting cross-border EU-Mediterranean cooperation on sustainable water-energy policies.

Biography

Agis M. Papadopoulos is since 1998 Professor for Energy Systems at the School of Mechanical Engineering of the Aristotle University of Thessaloniki.

His main research interests lie in the fields of (a) Energy conservation and renewable energy sources, (b) Energy and environmental design of buildings, and (c) Energy and environmental policies. He has coordinated more than 65 research projects and authored more than 175 journal papers.

He is Associate Editor of Energy and Buildings and was between 2012 and 2022 Editor-in-Chief of the International Journal of Sustainable Energy

He was Visiting Professor at the University of Cyprus, Visiting Scholar at the University of New South Wales, Sydney, and is since 2015 Visiting Professor at the Technical University of Hamburg, Germany.

Between 2003 and 2005 he was a member of the Regulatory Authority for Energy of Greece.

Between 2014 and 2018 he was Vice-Chairman of the Open University of Cyprus.

Since August 2019 he is Chairman of the Board of EYATH S.A. – Thessaloniki Water Supply and Sewerage Company.



Giuseppe Marco Tina
University of Catania , Italy

Harnessing the Sun: Technical and Economic Insights on Floating Photovoltaic Systems and Their Aquatic Integration

Floating photovoltaic systems are emerging as a promising alternative to traditional ground-based solar power plants. While ground-based PV has served as a cornerstone of renewable energy generation, floating PV offers several distinct advantages, including reduced land use requirements and improved energy yield due to cooler water temperatures. However, the potential ecological benefits and drawbacks for water bodies require thorough evaluation. Integrating PV modules into water basins necessitates specific analyses to assess impacts on efficiency, reliability, and environmental effects. A quantitative evaluation of these factors demands tailored monitoring solutions that consider a broader range of variables compared to those used for ground-mounted PV systems. Our analysis of pilot floating PV systems has focused on understanding their unique characteristics and performance, taking into account various floating solutions. By comparing floating PV with traditional ground-based systems, we have identified key areas where floating systems can excel. This presentation will explore the latest advancements in floating PV technology, highlighting its potential to make substantial contributions toward a sustainable energy future. We will discuss the associated benefits, challenges, and future prospects of floating PV systems, providing valuable insights for policymakers, investors, and industry professionals.

Biography

Giuseppe Marco Tina earned his M.Sc. and Ph.D. in Electrical Engineering from the University of Catania, Italy, in 1988 and 1992, respectively. After honing his expertise at Agip Refineries and ST Microelectronics, Catania, as an Electrical Engineer from 1993 to 1997, he joined the Department of Electrical, Electronics, and Informatics Engineering at the University of Catania. He now serves as a full Professor, leading the Power System Research group and Laboratory. His cutting-edge research focuses on the transformative impact of renewable generation systems on power grids, with a particular emphasis on the advanced numerical and experimental analysis of floating, agrivoltaic, and PV/T systems. In 2023 as a coauthor of the paper “Techno-economic potential and perspectives of floating photovoltaics in Europe”, he has been awarded by Solar Energy Journal Best Paper Award 2023, in the Solar Systems Integration category by Solar Energy Society (ISES). Author of 300 scientific papers: International journals (130), conference proceedings (153) and chapter of books (15), mainly on analysis and modelling of Wind and Photovoltaic generation systems, DGSs (Dispersed Generation Systems), Energy and Ancillary Services Markets, Stationary applications of Hydrogen Technology, photovoltaic/thermal (PV/T) systems, monitoring and diagnostic of photovoltaic systems. He has published three books on FPVs: «Submerged and Floating Photovoltaic Systems: Modelling, Design and Case Studies, Academic Press, 2017; Floating PV Plants, Academic Press, 2020; Progress in Floating Photovoltaic Systems, Elsevier, 2025.



Levent Sevgi
Istanbul Technical University, Turkey

From Engineering Electromagnetics to Electromagnetic Engineering: Teaching/Training Next Generations

The role of Electromagnetic (EM) fields in our lives has been increasing. Communication, remote sensing, integrated command/ control/surveillance systems, intelligent transportation systems, medicine, environment, education, marketing, and defense are only a few areas where EM fields have critical importance. We have witnessed the transformation from Engineering Electromagnetics to Electromagnetic Engineering for the last few decades after being surrounded by EM waves everywhere. Among many others, EM engineering deals with broad range of problems from antenna design to EM scattering, indoor–outdoor radiowave propagation to wireless communication, radar systems to integrated surveillance, subsurface imaging to novel materials, EM compatibility to nano-systems, electroacoustic devices to electro-optical systems, etc. The range of the devices we use in our daily life has extended from DC up to Terahertz frequencies. We have had both large-scale (kilometers-wide) and small-scale (nanometers) EM systems. A large portion of these systems are broadband and digital and must operate in close proximity that results in severe EM interference problems. Engineers must take EM issues into account from the earliest possible design stages. This necessitates establishing an intelligent balance between strong mathematical background (theory), engineering experience (practice), and modeling and numerical computations (simulation).

This Distinguished/keynote lecture aims at a broad-brush look at current complex EM problems as well as certain teaching / training challenges that confront wave-oriented EM engineering in the 21st century, in a complex computer and technology-driven world with rapidly shifting societal and technical priorities.

Biography

Prof. Dr. Levent Sevgi is a Fellow of the IEEE (since 2009) and the recipient of IEEE APS Chen-To Tai Distinguished Educator Award (2021). He was with Istanbul Technical University (1991–1998), TUBITAK-MRC, Information Technologies Research Institute (1999–2000), Weber Research Institute / NY Polytechnic University (1988–1990), Scientific Research Group of Raytheon Systems Canada (1998 – 1999), Center for Defense Studies, ITUV-SAM (1993 –1998 and 2000–2002) and with University of Massachusetts, Lowell (UML) MA/USA as a full-time faculty (2012 – 2013), DOGUS University (2001-2014), Istanbul OKAN (2014 - 2021), and ATLAS (2022-2024) Universities.

He served four years (2020-2023) as an IEEE AP-S Distinguished Lecturer. Since Jan 2024 he has been the chair of the IEEE AP-S DL Committee. He served one-term in the IEEE AP-S AdCom (2013-2015) and one-term and as a member of IEEE AP-S Field Award Committee (2018-2019). He had been the writer/editor of the “Testing ourselves” Column in the IEEE AP Magazine (2007-2021), a member of the IEEE AP-S Education Committee (2006-2021), He also served in several editorial boards (EB) of other prestigious journals / magazines, such as the IEEE AP Magazine (2007-2021), Wiley’s International Journal of RFMiCAE (2002-2018), and the IEEE Access (2017-2019 and 2020 - 2022). He is the founding chair of the EMC TURKIYE International Conferences (www.emcturkiye.org).

He has been involved with complex electromagnetic problems for nearly four decades. His research study has focused on electromagnetic radiation, propagation, scattering and diffraction; RCS prediction and reduction; EMC/EMI modelling, simulation, tests and measurements; multi-sensor integrated wide area surveillance systems; surface wave HF radars; analytical and numerical methods in electromagnetics; FDTD, TLM, FEM, SSPE, and MoM techniques and their applications; bio-electromagnetics. He is also interested in novel approaches in engineering education, teaching electromagnetics via virtual tools. He also teaches popular science lectures such as Science, Technology and Society.

He has published many books / book chapters in English and Turkish, over 180 journal/magazine papers / tutorials and attended more than 100 international conferences / symposiums. His three books *Complex Electromagnetic Problems and Numerical Simulation Approaches*, *Electromagnetic Modeling and Simulation* and *Radiowave Propagation and Parabolic Equation Modeling* were published by the IEEE Press - WILEY in 2003, 2014, and 2017, respectively. His fourth and fifth books, *A Practical Guide to EMC Engineering (Sep 2017)* and *Diffraction Modeling and Simulation with MATLAB (Feb 2021)* were published by ARTECH HOUSE.

His **h-index** is **38**, with a record of 5200+ citations (source: Google Scholar, Feb 2025).



Nuno Lopes
PNO Group, Netherlands

From Smart to Trustworthy: Embedding Secure AI and Governance in the Next-Generation Smart Cities

The acceleration of digital transformation in urban environments brings unprecedented opportunities and new risks. As cities increasingly adopt AI-driven infrastructures and IoT-enabled services, a paradigm shift is needed to ensure not just smartness, but trustworthiness. This talk addresses how secure machine learning, blockchain-enabled governance, and ethical-by-design architectures can enhance transparency, data sovereignty, and citizen trust in smart city ecosystems.

Drawing on lessons from Horizon Europe projects such as ACHILLES and PROBONO, as well as real-world deployments across European smart neighborhoods, the session will present a reference framework for implementing AI systems that are resilient, interpretable, and aligned with regulatory and societal values. Emphasis will be placed on integrating ethical AI, digital twin infrastructure, and adaptive governance into existing city systems, contributing to the EU Green Deal and 'Do No Significant Harm' principles.

Biography

Nuno Vasco Lopes is a Senior Innovation Consultant at PNO Consultants and a researcher and professor with over two decades of experience in digital transformation, IoT, secure AI, and smart city governance. His work spans leadership roles at the United Nations University and the Digital Transformation CoLAB, where he directed pioneering projects with industry giants like Bosch and IKEA. At the forefront of European R&I, he actively contributes to Horizon Europe initiatives, including the ACHILLES and PROBONO projects, integrating ethical-by-design AI, digital twins, and blockchain-based governance into next-generation urban infrastructures. His research has shaped policies and standards in Europe and globally, driving smart cities toward trustworthiness, resilience, and societal value in alignment with the EU Green Deal and United Nations principles and Sustainable Development Goals (SDGs).



Dubravko Čulibrk
The Institute for Artificial Intelligence
Research and Development of Serbia, Serbia

AI-disrupted Medicine and How to Apply It

In recent years, the integration of Artificial Intelligence (AI) in the field of medicine has brought about a significant transformation in healthcare delivery. This talk will delve into the disruptive potential of AI in revolutionising various aspects of medicine, from diagnosis and treatment to personalised medicine and patient care. By leveraging machine learning algorithms, big data analytics, and advanced technologies, AI is reshaping the landscape of healthcare by enabling faster and more accurate diagnoses, optimising treatment plans, and improving patient outcomes.

The Institute for Artificial Intelligence Research and Development of Serbia is implementing several projects in this domain and finds itself at a forefront of the effort to apply AI to transform healthcare to the benefit of all its citizens.

This talk will explore the ethical considerations, challenges, and opportunities that arise with the widespread adoption of AI in medicine, but will also present in detail some state-of-the-art computer vision approaches designed to aid radiologists.

Join our speaker as we navigate through the exciting realm of AI-disrupted medicine and envision a future where technology plays a pivotal role in enhancing healthcare for the people.

Biography

Dubravko Čulibrk is a Full Professor of Information Systems Engineering at the Department of Industrial Engineering and Management of the Faculty of Technical Sciences, University of Novi Sad, Serbia and the Director of The Institute for Artificial Intelligence Research and Development of Serbia, since the institute's inception. Dating back to his PhD days spent at the Florida Atlantic University (2003-2006), USA he has been conducting research in the domain of biologically-inspired machine learning, with a particular focus on neural networks, computer vision and multimedia understanding. He spent two years (2013-2015) as a postdoc researcher at the University of Trento, Italy with the Multimedia and Human Understanding Group, working with prof. Nicu Sebe. On his more recent sabbatical (2018-2019) he succumbed to his entrepreneurial side and manned the post of Senior Research Scientist at Tandemlaunch, a unique deep-tech startup foundry in Montreal. He is an NVIDIA Deep Learning Institute University Ambassador and a member of National AI Council of Serbia. His current research interests include: Neural Networks and Deep Learning, Computer Vision, Machine Learning and Data Science, Multimedia, Visual Attention, Image/Video Processing and Remote Sensing.



Tomislav Grgić
Ericsson Nikola Tesla, Croatia

IoT and AI-based Network Enablers for Evolution towards Future 6G Technologies

During this decade, Telco providers have been building strong 5G networks that improved User Experience and provided brand new cloud-native network design to support Low Latency, Network Exposure, or Massive IoT. Although substantial investments have been made, full business potential is still to be unlocked. 5G Advanced, as a currently emerging and use case oriented standard, introduces Intent-Driven networking, AI-powered and service aware RAN, and support for Reduced Capability (RedCap) devices. This is an important step in the evolution of cellular wireless networks towards 6G, which is expected to mark the next decade. This lecture will provide a brief Ericsson overview of what we can expect from a future 6G network, and what are the key IoT and AI enablers that will steer the technological evolution towards next generation 6G network. Topics such as precise Indoor Positioning, Deterministic Networking, Ultra Energy Efficiency or Cyber-Physical Interaction, will be addressed by a future AI-native architecture, characterized with Intelligence-Everywhere concept, Distributed Data Architecture, Autonomous Operations, and AlaaS.

Biography

Tomislav Grgic received his dipl.ing (2006) and PhD (2013) degree from the University of Zagreb, Faculty of Electrical Engineering and Computing (FER). He was an assistant and a post-doc researcher at the same Faculty, at the Department of Telecommunications, between 2006 and 2017, in the areas of context-based online charging and network policies in the next generation mobile networks. He published a number of scientific and expert papers, and participated in several research projects with partners from industry and academia. In 2017 he continued his career in industry, working for Ericsson Nikola Tesla (ENT) as Solution Manager for Telco Core and Cloud, to present day. He is an end-to-end technical lead in pre-sales and post-sales activities for ENT's Telco customers, mainly covering areas of core network planning & transformation, cloud-native 5G network infrastructure, and telco packet core. He is involved in several collaboration initiatives between FER and ENT, and contributes as a lecturer in one Master programme Course at FER.

June 16, 9:00–10:30; Big Hall KEYNOTE SPEAKER



Ivan Marković
University of Zagreb, Croatia

A Gentle Introduction to Human-Robot Interaction

Human-robot interaction is a research field dedicated to understanding, designing, and evaluating robot systems for use by or with human. In this talk we shall take a look into the fundamental principles of how autonomous robots operate and couple it with an early history of human-robot interaction and certain psychological aspects of the field. Interestingly, studying robotic systems for better human-robot interaction not only enhances the engineering aspects of the problem, but also teaches us something about how to understand humans themselves better. We shall also discuss multimodal interaction and thereafter provide an overview of the Bayesian Theory of Mind for estimating human intentions. Besides the introduction on the subject of human-robot interaction, the talk will also present recent results on the topic carried out within the activities of the Laboratory for Autonomous Systems and Mobile Robotics of the University of Zagreb Faculty of Electrical Engineering and Computing, Croatia.

Biography

Ivan Marković is a Full Professor at the University of Zagreb Faculty of Electrical Engineering and Computing, Croatia (UNIZG-FER) where he leads the Robotic Perception and Sensor Fusion group within the Laboratory for Autonomous Systems and Mobile Robotics – LAMOR (<http://lamor.fer.hr>). He received the M.Sc. and Ph.D. degree in Electrical Engineering from the UNIZG-FER in 2008 and 2014, respectively. His research is focused on various aspects of estimation theory, sensor fusion, and machine learning with applications to robot and vehicle autonomy and human-robot interaction. He received the National Science Award by the Republic of Croatia (2023), the Young Scientist Award “Vera Johanides” from the Croatian Academy of Technical Sciences (2018), and the Silver Plaque “Josip Lončar” UNIZG-FER for outstanding doctoral dissertation (2014). He has actively participated as a researcher in about 20 research and development projects at national and EU level. He was a visiting researcher at INRIA Rennes-Bretagne Atlantique, Rennes, France, under the supervision of Prof. François Chaumette. He serves as the Editor-In-Chief of the T&F journal *Automatika* indexed in the Science Citation Index Expanded. He is a member of the Institute of Electrical and Electronics Engineers(IEEE), IFAC Technical Committee on Robotics, and the Croatian Society for Communication, Computing, Electronics, Measurement and Control (KoREMA).



Anwitaman Datta
De Montfort University, UK

On building trustworthy
decentralized infrastructure -
Experiences from the BlockChain I/O
project

Blockchain technology is considered crucial in the design of trustworthy decentralized information systems and infrastructure. In its simplest avatar, a blockchain enables secure tokens transfers in digital marketplaces, building upon which, researchers have extended capabilities to incorporate other desirable properties such as programmability, efficiency, privacy, and price stability. However, these properties do not always generalize to a setting across multiple independent blockchains. Considering the growing number of existing blockchain platforms but the lack of an overarching framework which can allow a larger scale decentralized system of (decentralized) systems, several key blockchain interoperability as well as security & privacy primitives have been developed in the context of BlockChain I/O project for creating a cross-chain marketplace. This includes mechanisms for decentralized reputation and credential systems, which drive fine-grained access control where a decision to carry out a specific transaction, or access to certain resources are conditioned, while credentials are created and disclosed in a privacy aware, need-to-know basis.

Biography

Anwitaman Datta joined De Montfort University, UK in October 2024 as a Professor of Cyber Security and he holds an associate professorship (on leave) at the College of Computing and Data Science, Nanyang Technological University, Singapore. His core research interests span the topics of large-scale resilient distributed systems, information security and applications of data analytics. Presently, he is exploring topics at the intersection of computer science, public policies & regulations along with the wider societal and (cyber)security impact of technology. This includes the topics of social media and network analysis, privacy, cyber-risk analysis and management, cryptocurrency forensics, the governance of disruptive technologies, as well as impact and use of disruptive technologies in digital societies and in government's technology stack.

TECHNICAL PROGRAM

Monday, June 16 9:00 - 10:30

E1: Renewable energy and technologies

Chair: Zoran Blažević (University of Split, Croatia)

Comparative Study of Modeled and Measured Spectral Irradiance for PV Technology Applications

Ivan Bevanda (University of Mostar, Bosnia and Herzegovina); Tihomir Betti (University of Split, Croatia); Petar Marić (University of Mostar, Bosnia and Herzegovina); Ivan Marasović (University, Croatia)

Floating Bifacial PV Systems: An Experimental Comparison

Giuseppe M Tina and Gaetano Mannino (University of Catania, Italy); Amr Osama Mostafa Mohamed (University of Catania, Italy & Port Said University, Egypt); Alessio Cucuzza, Andrea Canino and Fabrizio Bizzarri (Enel Green Power, Italy)

Genetic Algorithm-Optimized Wind Tunnel for Experimental Validation of High-Efficiency Savonius Wind Turbines

Ivo Marinić-Kragić (FESB, University of Split, Croatia); Igor Pehnc (University of Split, FESB, Croatia); Drago Bulić and Teo Čolović (University of Split FESB, Croatia)

Integration of renewable gaseous fuels and hydrogen into natural gas infrastructure: A review

Dimitrios Gidaris, Effrosyni Giama, Christos Vlachokostas, Panagiotis Seferlis and Agis Papadopoulos (Aristotle University of Thessaloniki, Greece)

Monday, June 16 9:00 - 10:30

EM1: Engineering Modelling of Renewables

Chair: Vicko Doric (University of Split, FESB, Croatia)

Enhancing the Precision of PEM Fuel Cell Numerical Models Using Temperature Field Mapping

Ivana Hrabar, Željko Penga and Bruno Ševo (University of Split, Croatia); Jure Penga and Gojmir Radica (University of Split, FESB, Croatia)

Computational Analysis of a Planar PEM Fuel Cell Stack for Portable Power Applications

Bruno Ševo, Željko Penga and Ivana Hrabar (University of Split, Croatia); Jure Penga and Gojmir Radica (University of Split, FESB, Croatia)

Revolutionizing Photovoltaic Asset Performance with Digital Twin and AI

Ashok Kumar Patil, Nikhil Chanda, Jyothiraditya Danda and Vaishnavi M (PES University, India); Kousthub Menon (PES University, Bangalore, India); Prasad Honnavalli (PES University, India)

Techno-economic evaluation of investment models for solar power plants: from roof leasing to local energy market optimization

Ivona Šironja (University of Zagreb, Croatia & Grid ONE, Croatia); Mirna Gržanić (University of Zagreb, Croatia); Hrvoje Pandzic (Fer, Croatia)

Assessment of Low Frequency Electromagnetic Fields Generated from Subsea Power Cables used in Offshore Wind Farms

Dragan Poljak and Mario Cvetković (University of Split, Croatia)

The Effect of Burial Depth of Offshore Wind Turbine Power Cables to the Magnetic Field Levels on Marine Life Safe Zones

Mario Cvetković and Dragan Poljak (University of Split, Croatia)

Monday, June 16 9:00 - 10:30

P1: Energy Modeling

Chair: Mišo Jurčević (University of Split, FESB, Croatia)

CFD modeling on a solar thermal energy transfer performances with experimental validations in a water-based serpentine photovoltaic-thermal collector

Sang Shin Park and Ji-Hong Moon (Korea Institute of Energy Research, Korea (South))

Improving the performance of a solar air collectors by using longitudinal baffle

Ghizlene Boussouar (Lublin University of Technology, Poland)

Advanced Parameter Identification Method for Double Diode Model of PV Module Combining Nonlinear Least Squares and Support Vector Regression

Petar Marić (University of Mostar, Bosnia and Herzegovina); Ivan Marasović (University, Croatia); Ivan Bevanda (University of Mostar, Bosnia and Herzegovina); Antonio Vuletić (FESB, University of Split, Croatia)

Laboratory model and prototype of a control and monitoring system for microgrids with renewable energy sources and hydrogen technologies

Ankica Kovač (The University of Zagreb, Croatia); Tessa Uroić and Vesla Alar (Faculty of Mechanical Engineering and Naval Architecture, Croatia); Frano Barbir (University of Split, FESB, Croatia), Motaleb Miri (KONČAR - Electrical Engineering Institute Ltd., Croatia)"

Monday, June 16 9:00 - 10:30

RFID1: Special Session on Electromagnetic Innovation through Additive and Advanced Manufacturing Technologies (supported by IEEE CRFID and IEEE TC-AMES)

Chairs: Adina B. Barba (Radio6ense Srl, Italy & University of Rome Tor Vergata, Italy), Francesco P Chietera (Polytechnic of Bari, Italy)

Designing Flexible Antenna Substrates with 3D-Printed Compliant Structures

Francesco P Chietera and Waleef Ullah Usmani (Polytechnic of Bari, Italy); Luca Catarinucci (University of Salento, Italy); Luciano Mescia (Polytechnic University of Bari, Italy)

Preliminary characterization of 3D printed tunable conductive structures for sensing applications

Luigi Davide Gala (Università di Napoli Federico II, Italy); Federico Parenti and Carlotta Ragazzo Capello (Università di Pisa, Italy); Claudio Esposito and Lorenzo Lombardi (Università di Napoli Federico II, Italy); Elisabetta Dimaggio (Università di

Pisa, Italy); Daniele Tammaro (University of Naples Federico II, Italy)

A Sinusoidal-Shaped 3-D Printed Wideband Microstrip Patch Antenna

Giovanni Andrea Casula (Università di Cagliari, Italy); Giorgio Montisci and Enrico Mattana (University of Cagliari, Italy)

Substrate-free Epidermal Tattoo Antennas for NFC and UHF Applications

Adina B. Barba (Radio6ense Srl, Italy & University of Rome Tor Vergata, Italy); Alessio Mostaccio (University of Rome Tor Vergata, Italy); Cecilia Occhiuzzi (University of Roma Tor Vergata, Italy); Gaetano Marrocco (University of Rome Tor Vergata, Italy)

Dual-Extrusion 3D Printing of Graphene-Based Composites for Strain Sensing Applications

Meshari Alsharari, Khaled Aliqab and Ammar Armghan (Jouf University, Saudi Arabia)

Monday, June 16 11:30 - 13:00

E2: Energy systems and technologies - PART I

Chair: Ivan Pivac (University of Split, FESB, Croatia)

Dual-Source Energy Harvesting for Wearable Electronics

Aminu Yusuf and Sedat Ballikaya (Istanbul University-Cerrahpaşa, Turkey)

Web-based Group Decision Support System for usage in Air Handling Unit Concept Development

Krešimir Osman (Zagreb University of Applied Sciences, Croatia); Mato Perić (University North, Croatia)

Case study of thermal management of axial flux electric motor

Marko Đula (Axialis, Croatia); Sandro Nizetic (University of Split, FESB, Croatia)

Modeling AI-Driven IoT Energy Consumption: From Device-Level Forecasts to System-Level Dynamics",

Milovan Medojević (The Institute for Artificial Intelligence Research and Development of Serbia & EnergyPulse DOO, Serbia); Nikola Marković (The Institute for Artificial Intelligence Research and Development of Serbia, Serbia); Aleksandar Rikalović (University of Novi Sad, Serbia)

Monday, June 16 11:30 - 13:00

EM2: Engineering Modelling - PART I

Chair: Dragan Poljak (University of Split, Croatia)

Presentation of the control algorithm for the drive of a workstation in the automotive industry

Krešimir Osman (Zagreb University of Applied Sciences, Croatia); Dominik Hegolj (Intis-Engineering, Buzin, Croatia); Mato Perić (University North, Croatia); Trpimir Alajbeg (Zagreb University of Applied Sciences, Croatia)

Shape synthesis with optimization of parametric values grid and THB-Spline parameterization model

Domagoj Samardzic and Milan Ćurković (University of Split, Croatia)

Numerical Analyses of S460MC and S460NL Butt Joints Welding Process

Mato Perić (University North Varaždin, Croatia); Tomasz Kik (Silesian University of Technology & Faculty of Mechanical Engineering, Poland); Jaromir Moravec and Daniel Klápště (Technical University of Liberec, Czech Republic); Ivica Galić (University of Zagreb, Croatia); Krešimir Osman (Zagreb University of Applied Sciences, Croatia)

Numerical investigation of the influence of the tightening force on the geometric stress concentration factor at the root of the bolt thread

Stipe Pleština (University of Split, FESB, Croatia); Vjekoslav Tvrdić, Milan Perkušić and Anđelo Čapeta (University of Split, Croatia)

Monday, June 16 11:30 - 13:00

P2: Engineering Modeling

Chair: Mišo Jurčević (University of Split, FESB, Croatia)

Use of modern diagnostic equipment for the purpose of improving the engine in use, case study

Tino Sumić (NAVAL STUDIES, Croatia); Jure Penga (University of Split, FESB, Croatia); Branko Lalić (University of Split, Faculty of Maritime Studies, Croatia); Nenad Vulić (Maritime Studies in Split, Croatia)

Some Useful Measures to Study Efficiency of Grounding Systems - Case of Simple Configurations

Dragan Poljak (University of Split, Croatia); Ivan Sučić (University of Split, Croatia)

Time-Series Representation Learning for Energy Demand Forecasting: A Contrastive Predictive Coding Approach

Manar Alkhatib (The British University in Dubai, United Arab Emirates); Ghanshyam Lalmani Chaturvedi (The British University in Dubai & Presight AI, United Arab Emirates)

Real-Time Thermal Control Using Reinforcement Learning-Augmented Active Disturbance Rejection Control

Yanming Zhong, Dong Li, Li Sun and Qingyao Chen (Southeast University, China)

Monday, June 16 11:30 - 13:00

RFID2: Special Session on Hardware, Intelligence and Engagement: From Circuits to Gameful IoT

Chairs: Massimo Merenda (University Mediterranea of Reggio Calabria, Italy), Aygün Varol (Tampere University, Finland)

Preliminary analysis of the exploitation of QVAR sensor for gesture recognition

Alfonso Messina (University of Reggio Calabria, Italy); Alessia Lazzaro (Mediterranean University of Reggio Calabria, Italy); Riccardo Carotenuto (University "Mediterranea" of Reggio Calabria, Italy); Massimo Merenda (University Mediterranea of Reggio Calabria, Italy)

A Novel Pulsing Technique for Synaptic Weight Updates in Memristor Crossbar Arrays

Alberto Arciello (Università Mediterranea di Reggio Calabria, Italy); Giuseppe Cimino (Università Mediterranea di Reggio Calabria, Italy); Massimo Merenda (Università Mediterranea di Reggio Calabria, Italy)

Precision Enhancement of Full-Body Tracking for Virtual Reality Applications

Antonia Bartulović (University of Split, FESB, Croatia); Maja Braović (University of Split - FESB, Croatia); Jakov Bejo and Ljiljana Šerić (University of Split, FESB, Croatia)

From Bracelets to Hoodies: Exploring Embedded Multimodal Assistive Controllers

Mustasin Mahmood Sakif and Tiina Ihalainen (Tampere University, Finland); Sari Merilampi (Satakunta University of Applied Sciences, Finland); Tiina Vuohijoki, Pasi Raunonen and Johanna Virkki (Tampere University, Finland)

Towards Real-World EDA Monitoring in Children: The Potential of Everyday Socks with Textile Electrodes

S M Musfequr Rahman (Tampere University, Finland & Tampere University of Technology, Finland); Henna Mattila, Lotta Eerola, Annika Maenpaa, Terhi Helminen, Pasi Raunonen, Anneli Kylliäinen and Johanna Virkki (Tampere University, Finland)

Microstructure regulation of heat transfer at solid-solid interfaces with lower stress for electronic devices cooling

Qingsong Song, Yunguang Ji and Hongtao Li (Hebei University of Science and Technology, China)

Monday, June 16 14:30 - 16:00

AIoT1: Special session on Artificial Intelligence of Things and Edge Intelligence - PART I

Chairs: Ivana Podnar Zarko (University of Zagreb, Croatia), Mario Kusek (University of Zagreb, Croatia)

Arabic Dialect Speech-Text Recognition Using Deep Learning

Manar Alkhatib (The British University in Dubai, United Arab Emirates); Omar Saleh Alboom (British University in Dubai, United Arab Emirates); Ashwaq Faisal (The United Arab Emirates University, United Arab Emirates); Khaled F. Shaalan (The British University in Dubai, United Arab Emirates)

The Impact of Meteorological Data on Machine Learning Model Development for Thermal Energy Consumption Forecasting in District Heating Systems

Milica Tasic and Ivan Ciric (University of Nis, Serbia); Vladan S. Jovanović and Marko Ignjatović (University of Niš, Serbia); Dejan Mitrovic (University of Nis, Serbia)

Leveraging Large Language Models for IoT Applications A Maritime Image Dataset Perspective

Mahtab Shahin (Estonian Maritime Academy, Tallinn University of Technology,

Estonia); Saeed Rahimpour and Tara Ghasempouri (Tallinn University of Technology, Estonia); Pentti Kujalai and Sanja Bauk (Estonian Maritime Academy, Tallinn University of Technology, Estonia)

LLM-FaaS: A Secured Large Language Model assisted Fog-as-a-Service Framework

Ebrahim Abdulla Mattar (University of Bahrain, Bahrain); Pronaya Bhattacharya (Amity University, Kolkata, India); Pushan Kumar Dutta (Amity University Kolkata, India & Amity School of Engineering and Technology, India); Joel J. P. C. Rodrigues (Senac Fac of Ceará, Brazil)

Towards AI-Augmented Co-Compilation for Smart IoT Systems Through Domain-Specific LLMs

Federico Ciccozzi (Malardalen University, Sweden)

Exploring the Boundaries of Resource-Constrained AIoT: Tiny Machine Learning for Condition Monitoring using 8-bit and 32-bit Microcontrollers

Sheena T Fernandez and Marta Vallejo (Heriot-Watt University, United Kingdom (Great Britain)); Theodore Lim (Heriot-Watt University, Mexico)

Monday, June 16 14:30 - 16:00

E3: Energy conversion and Energy Efficiency

Chair: Gojmir Radica (University of Split, FESB, Croatia)

Heat and mass transfer performance of heat pipe and evaporator coupled cooling system for building dehumidification

Wenke Zhao (Harbin Institute of Technology, China); Guohui Yang (Baicheng, China); Kaihan Xie, Bingxi Li and Yanning Zhang (Harbin Institute of Technology, China)

Investigation of Sludge Drying Performances Using a Designed Microwave Thermogravimetric System

Kaihan Xie (Harbin Institute of Technology, China); Zhihong Liu (Tsinghua University, China); Wenke Zhao and Yanning Zhang (Harbin Institute of Technology, China)

The Effect of High-Resolution Wind Speed and Wind Direction Measurements on Dynamic Thermal Rating

Nika Mlinarič Hribar (Jožef Stefan Institute, Slovenia); Matjaž Depolli (Jozef Stefan Institute, Slovenia); Gregor Kosec (Jožef Stefan Institute, Slovenia)

XAI-OptiEV: Explainable DL Framework for Optical Fiber Fault Detection to Optimize Energy Efficiency at EV Charging Stations

Lakshit Pathak, Prachita Patel, Riya Upadhyay and Rajesh Gupta (Nirma University, India); Sudeep Tanwar (Nirma University & Institute of Technology, India); Kashif Saleem (King Saud University, Saudi Arabia); Joel J. P. C. Rodrigues (Senac Fac of Ceará, Brazil)

Study on the Effect of Silica Sand Method in Improving the Color of Non-Conforming Mixed Oil Distilled Diesel

Zijian Wang and Gang Deng (China Oil and Gas Pipeline Network Corporation, China); Yulin Zhou, Bohong Wang, Limei Gai and Zhipeng Yu (Zhejiang Ocean University, China)

Financial challenges and risk assessment for building renovation in nZEB standard: A case study

Margareta Zidar (Energy institute Hrvoje Požar, Croatia); Vlasta Zanki (University of Zagreb & Geotehnički Fakultet, Croatia); Marino Grozdek and Juraj Čukelj (University of Zagreb, Croatia)

Monday, June 16 14:30 - 16:00

EM3: Engineering Modelling - PART II

Chair: Maja Škiljo (University of Split, Croatia)

Assessment of steady-state temperature in a single-layer human body model: analytical approach

Enida Cero Dinarević (FESB, Bosnia and Herzegovina); Dragan Poljak (University of Split, Croatia)

Channel Model of Line-of-Sight Radio Propagation by Reflection over Lossy Ground for Cellular Networks

Zoran Blažević, Maja Škiljo and Dragan Poljak (University of Split, Croatia)

Dosimetric Analysis of Human Exposure in Near-Field Wireless Power Transfer Systems: A Comparison of Analytical and Numerical Methods

Petra Rasic, Zoran Blažević, Dragan Poljak and Maja Škiljo (University of Split, Croatia)

Numerical comparison of natural frequencies with vortex separation frequencies of a laboratory model of a wind turbine blade

Stipe Pleština (University of Split, FESB, Croatia); Damir Sedlar (University of Split, Croatia)

Monday, June 16 14:30 - 16:00

P3: Building Efficiency

Chair: Vjekoslav Tvrdić (University of Split, Croatia)

Energy Performance and Carbon Reduction Effects of Triple-Glazed Windows in Green Remodeling

Hansol Lee (Korea Institute of Civil Engineering and Building Technology, Korea (South)); Kyeong-seok Choi (Korea Institute of Civil Engineering and Building Technology(KICT), Korea (South))

Energy Efficiency in Buildings: EPC and SRI as Enablers of Future Renovations

Boris Sucic and Goran Matesic (Jozef Stefan Institute, Slovenia); Georg Vogt (Empirica GmbH Bonn, Germany)

A Dual Approach to Light Pipe Efficiency: Experimental Validation and Simulation Results

Dionysia Kolokotsa (Chemical and Environmental Engineering School, Technical University of Crete, Greece); Mat Santamouris (University of New South Wales, Australia)

Monday, June 16 14:30 - 16:00

RFID3: Special Session on Innovative Antennas and Intelligent Systems: Shaping the Future of RFID Application

Chairs: Giovanni Andrea Casula (Università di Cagliari, Italy), Luciano Mescia (Polytechnic University of Bari, Italy)

Evaluation of Growing Skin Organoid Culture Utilizing RFID Tag

Mohammed S. Salim (University of Kent, United Kingdom (Great Britain) & University of Ninevah, Iraq); Alexander J Casson (The University of Manchester, United Kingdom (Great Britain)); Benito Sanz-Izquierdo and John Batchelor (University of Kent, United Kingdom (Great Britain))

Wireless Battery-Free Sensor Probe for Temperature/Humidity Measurement in Sustainable Pharmaceutical Blister

Adina B. Barba (Radio6ense Srl, Italy & University of Rome Tor Vergata, Italy); Nicola D'Uva (RADIO6ENSE srl, Italy); Sara Amendola (University of Rome Tor Vergata & Radio6ense srl, Italy); Gaetano Marrocco (University of Rome Tor Vergata, Italy); Cecilia Occhiuzzi (University of Roma Tor Vergata, Italy)

Digital Twin of Retail Environment Using RFID Particle Filter Localization

Christopher Turner, Dheeraj Bhaskaruni and Xiangyu Wang (Auburn University, USA); Jian Zhang (Kennesaw State University, USA); Shiwen Mao, Senthilkumar Periaswamy and Justin Patton (Auburn University, USA)

Numerical Analysis of Human Head Exposure to Electromagnetic Radiation Due to 5G Mobile Phones

Francesco P Chietera and Waleef Ullah Usmani (Polytechnic of Bari, Italy); Domenico Caggiano and Claudio Maria Lamacchia (IAMATEK Srl, Italy); Gaetano Chimenti (IAMATEK srl, Italy); Luciano Mescia (Polytechnic University of Bari, Italy)

Advancing Wireless Sensing: PEDOT Integration in High-Frequency RFID Sensors

Giovanni Andrea Casula (Università di Cagliari, Italy); Giovanna Mura and Giorgio Montisci (University of Cagliari, Italy); Paolo Maxia (INAF, Italy); Piero Cosseddu, Giuseppe Sforazzini, Antonello Mascia and Enrico Mattana (University of Cagliari, Italy)

Thue-Morse Code Implementation for the Design of a Concentric Hexagonal Ring Array

Waleef Ullah Usmani and Francesco P Chietera (Polytechnic of Bari, Italy); Luciano Mescia (Polytechnic University of Bari, Italy)

Monday, June 16 16:00 - 16:30

RFID P: Special Poster Session: "RFID/IoT Research Projects: Hardware and Software Solutions in Focus"

Chairs: Mohamed Emara (ISPC-CNR, Italy), Andrea Motroni (University of Pisa, Italy)

On-Device Dataset Distillation: The MNIST Use Case and Initial Experiments on Agri-Food product classification

Mohamed Riad Sebti (University Mediterranea of Reggio Calabria, Italy); Zohra Dakhia (University Mediterranea of Reggio Calabria, Italy & University Federico 2 of Naples, Italy); Antonella Macheda, Demetrio Iero, Mariateresa Russo and Massimo Merenda (University Mediterranea of Reggio Calabria, Italy)

Sensor Technology NoiSens for Noise Detection on Construction Sites

Boris Obrovski (University of Novi Sad, Serbia); Ivana Krtolica (The Institute for Artificial Intelligence Research and Development of Serbia, Serbia); Miljan Šunjević (Science Associate, Serbia); Vladimir Rajs (Faculty of Technical Sciences, Serbia)

SENSE IoT-Driven Platform for Real-Time Environmental Monitoring: Network Design and Hardware Implementation

Mohamed Emara, Noushin Najafiragheb and Mohamed Ali Jaziri (ISPC-CNR, Italy); Riccardo Colella (National Research Council (CNR), Italy); Andrea Pandurino (National Research Council, Italy); Francesco Taurino (ISPC-CNR, Italy); Davide Zecca (CNR - Istituto di Scienze del Patrimonio Culturale, Italy); Alberto Bucciero (CNR, Italy)

LiDAR and UWB Sensor Fusion for Improved Safety in Agricultural Work Sites

Andrea Motroni, Emanuele Tavanti and Paolo Nepa (University of Pisa, Italy); Danilo Monarca and Pierluigi Rossi (University of Tuscia, Italy); Davide Gattamelata, Daniele Puri and Leonardo Vita (Italian Institute for Insurance Against Accidents at Work - INAIL, Italy)

Precision in Contactless Respiratory Monitoring: Machine Learning-Based Algorithm Performance

Arnav Hari (IIT Ropar, India); Harsh Arora (IIIT Una, India); Simarpreet Singh (Thapar Institute of Engineering and Technology Patiala, India); Brijesh Kumbhani (IIT Ropar, India); Sam Darshi, Satyam Agarwal and Jyotindra Singh Sahambi (Indian Institute of Technology Ropar, India); Suksham Jain and Deepak Chawla (Government Medical College and Hospital, Chandigarh, India)

Flexible Phased Antenna Array for Ka-Band Applications: the WONDER Research Project

Domenico Caggiano (IAMAttek Srl, Italy); Francesco P Chietera and Waleef Ullah Usmani (Polytechnic of Bari, Italy); Serafino Convertini (IAMAttek srl, Italy); Claudio Maria Lamacchia (IAMAttek Srl, Italy); Gabriele Incerti, Filippo Rossi and Paul Danca (RINA Consulting S.p.A., Italy); Giuseppe Cirillo (Elettronica S.p.A., Italy); Luciano Mescia (Polytechnic University of Bari, Italy)

Integrating Emerging Technologies for Comprehensive Healthcare Solutions: Early Insights from the BRILLIANCE Project

Massimo Merenda (University Mediterranea of Reggio Calabria, Italy); Martina Teresa Bevacqua (Università Mediterranea di Reggio Calabria, Italy); Riccardo Carotenuto (University "Mediterranea" of Reggio Calabria, Italy); Riccardo Colella (National Research Council (CNR), Italy); Massimo De Vittorio, Barbara Gili Fivela and Giuseppe Grassi (University of Salento, Italy); Giuseppe Martino (Università "Mediterranea" di Reggio Calabria, Italy); Vincenzo Mastronardi, Luigi Portaluri, Michele Scaraggi, Francesco Sigona and Luca Catarinucci (University of Salento, Italy)

DSTM: Dual-Strategy Framework for Energy and Thermal Management on

Heterogeneous Multicore Systems-on-Chip

Milanpreet Kaur Sandhu and Suman Kumar (IIT Ropar, India)

Populating the Digital Twin of a Retail Store Using an RFID Autonomous Mobile Robot

Rafael Pous and Abdussalam Ali Alajami (Universitat Pompeu Fabra, Spain); Lluís Hernández and Álvaro Jiménez (Keonn Technologies, Spain)

Citizen Science for Sustainable Energy Transition and Air Quality: Social Perception and Evidence-Based Policymaking in Krzywca (Poland)

Monika Pełowska (Mineral and Energy Economy Research Institute of the Polish Academy of Sciences, Poland & Instytut Gospodarki Surowcami Mineralnymi i Energią PAN, Poland); Wit Hubert and Dominik Kryzia (Mineral and Energy Economy Research Institute of the Polish Academy of Sciences, Poland); Wojciech Kowalik (AGH University, Poland)

Monday, June 16 16:30 - 18:00

AIoT2: Special session on Artificial Intelligence of Things and Edge Intelligence - PART II

Chairs: Ivana Podnar Zarko (University of Zagreb, Croatia), Mario Kusek (University of Zagreb, Croatia), Gordan Jezic (University of Zagreb, Croatia)

Atomic Design for MLOps: A Modular Approach to Scalable and Reusable ML Pipelines

Asier Villar, Imanol Echeverria and Bruno Santidrian (Tecnalia, Spain); Mikel Emaldi (University of Deusto, Spain)

Bridging the Gap: Challenges and Limitations of Federated Learning in Real-World Applications

Vasilis Perifanis and Nikolaos Pavlidis (ATHENA Research Center, Greece); Fotini Nikolaidou and Despoina Kampouri (Indigma, Greece); Pavlos S. Efraimidis (Democritus University of Thrace & Athena Research Center, Greece)

Enhancing EV Charging Management with Dynamic Pricing and Edge Intelligence

Luka Gjurić, Gordan Jezic, Ivana Podnar Zarko and Mario Kusek (University of Zagreb, Croatia)

Dude, Who's Driving My Car? Detecting Familiar and Unfamiliar Drivers Using CAN Bus Data

Avery Elizabeth Oxendine (University of North Carolina Wilmington, USA); Hosam Alameleh and Damir Pulatov (University of North Carolina Wilmington, USA)

Evaluating Large Language Models for Multilingual and Typo-Tolerant Answer Validation in a Digital Quiz Application

Dario Vranjes (FESB, University of Split, Croatia); Toni Perkovic (University of Split, FESB, Croatia); Maja Braović (University of Split - FESB, Croatia); Ana Cupurdića (PMF, University of Split, Croatia)

Tuesday, June 17 8:30 - 10:00

E4: Power Engineering and power systems

Chair: Duje Ćoko (University of Split, FESB, Croatia)

Design of Dual Medium-Voltage Transformer Stations: Methodology Showcase

Matija Ištvanović, Vladimir Šimović and Antonio Cvetković (Zagreb University of Applied Sciences, Croatia)

Power System Fault Detection and Classification: Case Study with Large-Scale Grid Data

Adin Memić (University of Sarajevo, Bosnia and Herzegovina); Arman Ghaderi Baayeh and Michael Kleemann (KU Leuven, Belgium)

Analyzing Energy Consumption of Loihi 2 Neuromorphic Chip in a Self-driving Use-case

Adam Nagy (Budapest University of Technology and Economics, Hungary); Robert Szabo (Ericsson Hungary Ltd., Hungary); Laszlo Toka (Budapest University of Technology and Economics, Hungary)

Towards Sustainable Rural Electrification: Techno-Economic Feasibility Analysis & ML-Driven Distributed Energy Resource Planning

Hindesh Akash and Pushpendra Singh (Atria University, India); Mohan Kolhe (University of Agder, Norway)

Cybersecurity of Power Electronic Converters in Maritime Systems: Threat Landscape, Modeling, and Resilient Mitigation Strategies

Saeed Rahimpour (Tallinn University of Technology, Estonia); Mahtab Shahin and Sanja Bauk (Estonian Maritime Academy, Tallinn University of Technology, Estonia)

A Comparative Study Of Machine Learning Strategies To Reduce Computational Impact And Improve Sustainable Network Management

Harshit Chawla (Technological University of the Shannon, Ireland & Ericsson Ireland, Ireland); Enda Fallon and Sheila Fallon (Technological University of the Shannon, Ireland)

Tuesday, June 17 8:30 - 10:00

IoT1: Symposium on Internet of Things - General Track

Chairs: Luigi Patrono (University of Salento, Italy), Teodoro Montanaro (University of Salento, Italy), Davide Cantoro (University of Salento, Italy)

A Review on 6G: Pioneering the Future of Wireless Communication

Camilla Zambetti, Giuseppe Montaruli and Daniele Piccolomo (Politecnico di Bari, Italy); Niko Makitalo (University of Helsinki, Finland); Marco Fiore and Marina Mongiello (Politecnico di Bari, Italy)

IoT-Enabled Pyranometer using LoRa Technology

Ivan Burazin and Antonio Vuletic (University of Split, Croatia); Tea Erceg (University of Split & FESB, Croatia); Tihomir Betti (University of Split, Croatia)

EngageMate: An IoT-Driven Platform for Monitoring Teacher Engagement and Classroom Dynamics

Oihane Gómez-Carmona and Martín Fernández-de-Retana (University of Deusto,

Spain); Joan Navarro (La Salle Campus Barcelona, Universitat Ramon Llull, Spain); Xavier Solé-Beteta (La Salle - Universitat Ramon Llull, Spain); Diego Casado-Mansilla (University of Deusto, Spain); Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

Path planning of Unmanned Aerial Vehicle flying at low height for Internet of Underground Things - Application to data collection of buried communicating sensor nodes in agriculture

Christophe Cariou (University of Clermont Auvergne & INRAE, France); Laure Moiroux-Arvis, Fatiha Bendali, Yuankang Hu and Jean Mailfert (University Clermont Auvergne, France)

Assessing Energy Consumption and Thermal Impact in IoT Edge Federated Learning

Davide Cantoro, Angela-Tafadzwa Shumba, Gianluigi Semeraro, Teodoro Montanaro, Ilaria Sergi, Davide Rollo and Mattia Cotardo (University of Salento, Italy); Massimo Merenda (University Mediterranea of Reggio Calabria, Italy); Luigi Patrono (University of Salento, Italy)

RHEA: Residential Home Energy Advisor

Nikolaos Virtsionis Gkalinikis (Aristotle University of Thessaloniki, Greece & NET2GRID, Greece); Chrstoforos Nalmpantis (Aristotle University of Thessaloniki, Greece); Spyridon Chatzigeorgiou, Christos Athanasiadis and Dimitrios Doukas (NET2GRID BV, Greece); Dimitris Vrakas (Aristotle University of Thessaloniki, Greece)

Tuesday, June 17 8:30 - 10:00

P4: Environmental Applications

Chair: Željko Penga (University of Split, Croatia)

Quantifying the urban meteorological implications of anthropogenic heat over Sydney city

Ansar Khan (University of Calcutta, Kolkata, India); Mat Santamouris (University of New South Wales, Australia)

Integrating Local Climate Zones into Urban Solar Photovoltaic Potential Assessment

Tsampika Dimitriou, Nikolaos Skandalos and Dimitris Karamanis (University of Patras, Greece)

EnvioDev - A IoT System for Real-Time Monitoring of Environmental Parameters in Smart Cities

Josip Balen (Josip Juraj Strossmayer University of Osijek, Croatia); Ivan Aleks (FERIT Osijek, Croatia); Davor Damjanovic (Josip Juraj Strossmayer University of Osijek, Croatia); Antonio Antunović (FERIT Osijek, Croatia); Matej Arlovic (Josip Juraj Strossmayer University of Osijek, Croatia)

Tuesday, June 17 8:30 - 10:00

RFID4: Special Session on Technology for Life: revolutionizing Work, Health monitoring, and Safety with modern Electronics & Backscattering Communications

Chair: Andrea Motroni (University of Pisa, Italy)

Wireless Automatic Inspection of Soil and Plants through RFID IoT devices

Glauco Cecchi, Andrea Ria, Andrea Motroni, Paolo Bruschi and Paolo Nepa (University of Pisa, Italy)

A CDS-compensated RC Relaxation Oscillator for Clock Generation in Single-Chip IoT Devices

Francesco Gagliardi (University of Pisa, Italy); Simone Contardi (University of Pisa, Italy & Sensichips Srl, Italy); Margherita Scognamiglio (University of Pisa, Italy); Iacopo Nannipieri (Sensichips Srl, Italy); Paolo Bruschi and Andrea Ria (University of Pisa, Italy)

Preliminary Analysis of Federated Learning in Agrifood: From MNIST to Real-World IoT Applications in a Heterogeneous Environment

Zohra Dakhia (University Mediterranea of Reggio Calabria, Italy & University Federico 2 of Naples, Italy); Alessia Lazzaro (Mediterranean University of Reggio Calabria, Italy); Mohamed Riad Sebti, Demetrio Iero, Mariateresa Russo and Massimo Merenda (University Mediterranea of Reggio Calabria, Italy)

Smarttendance: A BLE-Based Mobile Application for Real-Time Student Attendance Tracking

Luka Munivrana (University of Split, FESB, Croatia); Vladimir Plestina (University of Split, Croatia); Sven Gotovac (University of Split & FESB, Croatia)

Unseen Triggers: Exploiting Wireless Channels to Activate Dormant Malware in Air-gapped Critical Infrastructure

Hosam Alameleh and Ulku Clark (University of North Carolina Wilmington, USA); Bilge Karabacak (University of North Carolina Wilmington, USA & UNCW, USA)

Wireless Pressure Sensor Based on an Additively Manufactured Thermoplastic Polyurethane (TPU) Transducer

Amirhossein Karami-Horestani (CIMITEC, Departament d'Enginyeria Electrònica & Universitat Autònoma de Barcelona, Spain); Ferran Paredes (Universitat Autònoma de Barcelona, Spain); Sandra Rodini, Filippo Costa and Simone Genovesi (University of Pisa, Italy); Ferran Martín (Universidad autónoma de Barcelona, Spain)

Tuesday, June 17 14:30 - 16:00

IoT2: Workshop on IoT and AI for sustainable and smart services in healthcare - PART 1

Chairs: Luigi Patrono (University of Salento, Italy), Erika Rovini (University of Florence, Italy)

Leveraging blockchain-based healthcare services with artificial intelligence

Lazar Marković, Aleksandra Trpkov and Danica Sovtić (University of Belgrade, Serbia); Branka Rodić (Academy of Applied Studies Belgrade, Serbia); Aleksandra

Labus (University of Belgrade, Serbia)

Edge-Cloud Latency Optimization: A Priority-Based Scheduling Framework with Dynamic VM Allocation

Ebrahim Abdulla Mattar (University of Bahrain, Bahrain); Pushan Kumar Dutta (Amity University Kolkata, India & Amity School of Engineering and Technology, India); Pronaya Bhattacharya (Amity University, Kolkata, India); Joel J. P. C. Rodrigues (Senac Fac of Ceará, Brazil)

An Innovative Digital Twin Platform for Supporting Doctors and Patients Affected by Chronic Heart Failure

Teodoro Montanaro, Ilaria Sergi and Angela-Tafadzwa Shumba (University of Salento, Italy); Nadia Mammone and Cosimo Ieracitano (University Mediterranea of Reggio Calabria, Italy); Cosimo Distante (CNR, Italy); Alessia Bramanti and Marina Garofano (University of Salerno, Italy); Luigi Patrono (University of Salento, Italy)

Nephele - Remote Healthcare Services, Ultrasound Medical Device Dematerialization

Antonio Passalacqua (Esaote S.p.A., Italy); Alessandro Carrega (UNIGE, Italy & CNIT, Italy); Giacomo Pedemonte and Silvia Volta (Esaote S.p.A., Italy)

Analyzing the Impact of Non-IID Data on IoT-Enabled Federated Learning for ECG Arrhythmia Detection

Davide Cantoro, Angela-Tafadzwa Shumba, Gianluigi Semeraro, Teodoro Montanaro, Ilaria Sergi, Massimo De Vittorio and Luigi Patrono (University of Salento, Italy)

Tuesday, June 17 14:30 - 16:00

LC: Life Cycle Assessment, Digital Solutions, and Sustainable Practices in Building Design and Construction

Chairs: Effrosyni Giama (Aristotle University of Thessaloniki, Greece), Paris Fokaides (Frederick University, Cyprus)

AI-Assisted IoT Monitoring for Tracking Construction and Demolition Waste

Pavel Trávníček (České vysoké učení technické v Praze, Fakulta stavebni, Czech Republic); Václav Nežerka (České vysoké učení technické v Praze, Czech Republic)

Comparison of energy and environmental labels of a refurbished building in Southern Italy

Antonio Gigante (University of Sannio, Italy); Rosa Francesca De Masi (Università degli Studi del Sannio, Italy); Alessandro Russo (University of Sannio, Italy); Dimitra Papadaki (University of Athens, Greece)

Recent Developments in Life Cycle Assessment Implementation in the EU: Advancing Sustainability Through Level(s) and the New European Bauhaus

Paris Fokaides (Frederick University, Cyprus)

Whole Life Cycle Analysis of Buildings: Carbon Sequestration Databases and Carbon Balances

Paris Fokaides and Evi Demetriou (Frederick University, Cyprus)

Renovation wave: Energy and environmental analysis of heat pumps and renewable energy systems for buildings

Effrosyni Giama, Marios Efthymiadis and Elli Kyriaki (Aristotle University of Thessaloniki, Greece); Paris Fokaidis (Frederick University, Cyprus); Agis Papadopoulos (Aristotle University of Thessaloniki, Greece)

Energy Efficiency vs. Smart Readiness: A Comparative Assessment of EPC and SRI in Building Renovations

Konstantinos Chatzikonstantinidis and Effrosyni Giama (Aristotle University of Thessaloniki, Greece); Afroditi Zamanidou (University of Western Macedonia & IsZEB DIH, Greece); Konstantinos Giagkoulas, Achilleas Nikolaos Mertzimekis and Agis Papadopoulos (Aristotle University of Thessaloniki, Greece)

Tuesday, June 17 14:30 - 16:00

RFID5: Special Session on Exploring Hardware Aspects of Low Power Wireless Communication for IoT Applications Across Asia

Chairs: Suman Kumar (IIT Ropar, India), Lalit Kumar Baghel (Indian Institute of Technology Ropar, India)

Bluetooth Low Energy Antenna Design for Monitoring Applications

Radhika Raina (Indian Institute of Technology Ropar, India); Kamal Jeet Singh and Suman Kumar (IIT Ropar, India)

Enhanced Range Dual-Coil NFC Antenna System for Diverse Near Field Applications

Hafiz Usman Tahseen (CNR-Institute for Microelectronics and Microsystems, Italy); Luca Catarinucci (University of Salento, Italy); Riccardo Colella (CNR, Italy); Chiara De Pascali and Vanessa Esposito (CNR-IMM, Italy); Luca Francioso (CNR-Institute for Microelectronics and Microsystems, Italy)

Circularly Polarised RFID Reader Antenna with an Integrated Power Divider

Radhika Raina (Indian Institute of Technology Ropar, India); Kamal Jeet Singh and Suman Kumar (IIT Ropar, India)

Transformation of Vehicular Networks through Machine Learning: Challenges and Opportunities

Sameer Kumar Singh (IIT Ropar, Rupnagar, India); Nishant Gupta (Linköping University, India); Rohit Singh (Dr B R Ambedkar National Institute of Technology Jalandhar, India); Brijesh Kumbhani and Arnav Hari (IIT Ropar, India)

Enhancing UAV Network Security: Machine Learning for DDoS Attack Detection

Ishita Sharma (IIT Ropar, India); Satyam Agarwal and Shashi Shekhar Jha (Indian Institute of Technology Ropar, India)

Radio Frequency Identification Reader Antenna Design for Tracking Applications

Radhika Raina (Indian Institute of Technology Ropar, India); Kamal Jeet Singh and Suman Kumar (IIT Ropar, India)

Wednesday, June 18 9:30 - 11:00

E5: Energy systems and technologies - PART II

Chair: Muslum Arici (Kocaeli University, Turkey)

Evaluation of a Geothermal-Driven Multigeneration System for Energy, Hy-

drogen and Fresh Water Production with LNG Cold Energy Recovery

Serpil Celik-Toker (Isparta University of Applied Sciences Isparta Turkey, Turkey); Onder Kizilkan (Isparta University of Applied Sciences, Turkey); Sandro Nizetic (University of Split, FESB, Croatia)

A Comprehensive Thermodynamic Analysis of a Solar-Assisted Multigeneration System with Partial Cooling-Reheating sCO₂ Brayton Cycle

Serpil Celik-Toker (Isparta University of Applied Sciences Isparta Turkey, Turkey); Onder Kizilkan (Isparta University of Applied Sciences, Turkey)

Challenges associated with the modeling of large-scale PTES - literature review

Vladimir Muncan (University of Novi Sad, Serbia); Igor Mujan (University of Novi Sad - Faculty of Technical Sciences, Serbia); Aleksandar Andjelkovic (University of Novi Sad, Serbia); Dusan J Macura (Public Utility Company Novi Sad Heating Plant, Serbia)

HYSYS and PSO Integrated Method for Mixed Oil Distillation Quality Control

Mingyue Xiao and Gang Deng (China Oil and Gas Pipeline Network Corporation, China); Yulin Zhou, Bohong Wang, Limei Gai and Zhipeng Yu (Zhejiang Ocean University, China); Toshov Javokhir Burievich (Tashkent State Technical University, Uzbekistan)

Contribution to Process Development and Energy Efficiency of Beeswax Sterilization

Marko Gložinić (University North, Croatia); Mato Perić and Ante Čikić (University North Varaždin, Croatia)

Bridging Gaps in Indoor Air Quality Integration - Research on Croatia's Construction Sector

Vlasta Zanki (University of Zagreb & Geotehnički Fakultet, Croatia); Franciska Erdelj (Green Building Council Croatia, Croatia)

Wednesday, June 18 9:30 - 11:00

IoT3: Workshop on IoT and AI for sustainable and smart services in healthcare - PART II

Chairs: Luigi Patrono (University of Salento, Italy), Erika Rovini (University of Florence, Italy)

A Novel Multi-Resolution Heart Rate Variability Analysis for IoT-based Drowsiness Detection: Preserving Temporal Trends in Features Series

Hossem Eddine Hafidi (University of Salento, Italy); Elisabetta De Giovanni (BCAM, Spain); Teodoro Montanaro, Ilaria Sergi, Massimo De Vittorio and Luigi Patrono (University of Salento, Italy)

IMU-Based Energy Expenditure Estimation for Various Walking Conditions Using TranSE

Abdelkarim Mamen, Teodoro Montanaro and Ilaria Sergi (University of Salento, Italy); Enrico Junior Schioppa (Inmatica S.p.A., Italy); Luigi Patrono (University of Salento, Italy)

A protocol for balance and mobility training via sensorized movement analysis

Dario Ghezzi (National Research Council of Italy, Italy); Filippo Palumbo (National Research Council (CNR), Italy)

Smart Hearing Protection System based on IoT and AI for Industrial Noisy Environments

Davide Rollo, Mattia Cotardo, Ilaria Sergi, Teodoro Montanaro and Hossem Ed-dine Hafidi (University of Salento, Italy); Luca Landi (University of Perugia, Italy); Raffaele Mariconte and Claudia Giliberti (Inail, Italy); Luigi Patrono (University of Salento, Italy)

Wednesday, June 18 9:30 - 11:00

P5: AI Applications

Chair: Marin Bugarić (University of Split, Croatia)

Will Technology Replace Humans? The Impact of Technological Advancements on Healthcare

Nikola Pavlović (School of Medicine, University of Split, Croatia); Katarina Vučkojević (University of Split, Croatia); Ivana Šolić (University Hospital Split, Croatia)

AI Assistant as Support to the Pathologist: A Machine Learning Approach

Ivana Krtolica (The Institute for Artificial Intelligence Research and Development of Serbia, Serbia); Aleksandra Čavić (Economy and Engineering Management in Novi Sad, Serbia); Boris Obrovski (University of Novi Sad, Serbia); Miljan Šunjević (Science Associate, Serbia); Milena Šunjević and Dragana Tegeltija (University of Novi Sad, Serbia)

Streamlining EU Regulatory Processes for High-Risk and Innovative Medical Devices and In Vitro Diagnostic Medical Devices

Ružica Bandić, Nensi Bralić, Miro Vuković and Ana Marušić (University of Split School of Medicine, Croatia)

Assessing the Role of AI in Project Risk Management: How Much Can AI Support Project Managers and Overcome Human Limitations?

Cinzia Battistella (University of Udine, Italy); Fabio Nonino (University of Rome La Sapienza, Italy); Alessandro Pompei (CASD, Italy)

Wednesday, June 18 9:30 - 11:00

SC1: Smart City - Energy Modeling

Chair: Ivo Marinić-Kragić (FESB, University of Split, Croatia)

Multi-Voltage Performance Analysis and Quality Index Development for DC EV Charging Systems using Ripple Measurement

Jeykishan Kumar K (CPRI, India)

Wind Field Estimation by Disparate Data Harmonization and Clustering: A Case Study in SplitDalmatia County

Mateo Radić (University of Split, Croatia); Ljiljana Šerić (University of Split, FESB, Croatia); Marin Bugarić (University of Split, Croatia); Selena Knežić Buhovac (University of Mostar & University of Split, Bosnia and Herzegovina)

Evaluating Time Series Models for Urban Wastewater Management: Pre-

dictive Performance, Model Complexity and Resilience

Vipin Singh (Berlin University of Applied Sciences and Technology, Germany); Tianheng Ling (University of Duisburg-Essen, Germany); Teodor Chiaburu (Berlin University of Applied Sciences and Technology, Germany); Felix Biessmann (Berlin University of Applied Science, Germany)

Adaptive Safety Modeling for Improved Battery Protection via Integrated State-of-Safety Estimation

Changwoo Kim and Hyo-Sub Choi (Korea Electronics Technology Institute, Korea (South))

Leveraging Machine Learning for Self-adaptive Sensing in WSNs: an Energy-aware Approach

Alessandro Vanacore (Company, Italy); Antonio Pescapé (University of Napoli Federico II, Italy); Paulo Carvalho (Centro Algoritmi, Universidade do Minho, Portugal); Solange Rito Lima (Centro Algoritmi, University of Minho, Portugal)

Thursday, June 19 9:00 - 10:30

BD1: Cultural and Historical Considerations under Energy and Climate Constraints

Chairs: Fabrizio Ascione (Università degli studi di Napoli Federico II, Italy), Vlasta Zanki (University of Zagreb & Geotehnički Fakultet, Croatia)

Social energy demand: Environmental Quality in Mayan Indigenous Communities from Mexico

Claudia Eréndira Vázquez-Torres (Autonomous University of Yucatán, Mexico); Leticia Ozawa-Meida (De Montfort University, United Kingdom (Great Britain)); Renan Quijano Cetina (Universidad Autonoma de Yucatan, Mexico); Marcos Gonzalez Trevizo (Universidad Autonoma del Estado de Baja California, Mexico)

The Royal Site of Carditello: energy design for the conservation of culture and the resilience of the architectural heritage

Teresa Iovane and Giuseppe Aruta (Università degli Studi di Napoli Federico II, Italy); Fabrizio Ascione (Università degli studi di Napoli Federico II, Italy); Claudia Colosimo, Filippo De Rossi, Gerardo Maria Mauro and Margherita Mastellone (Università degli Studi di Napoli Federico II, Italy); Anna Iaccheo (External Collaboration, Italy)

Thermal comfort and energy consumption in prisons: the case of an Italian historical building

Margherita Mastellone, Filippo De Rossi, Giuseppe Aruta, Teresa Iovane and Sara Riccardi (Università degli Studi di Napoli Federico II, Italy); Fabrizio Ascione (Università degli studi di Napoli Federico II, Italy); Maria Rosaria Santangelo (Università degli Studi di Napoli Federico II, Italy)

Indoor thermal analysis for energy and cultural heritage interaction

Tullio de Rubeis (University of L'Aquila, Italy); Francesco Smarra (University of l'Aquila, Italy); Giovanni Pasqualoni (University of LAquila Italy, Italy); Fabio Franchi, Alessandro D'Innocenzo and Dario Ambrosini (University of L'Aquila, Italy)

Opaque ventilated façade (OVF) with electricity conversion: analyses on a real installation

Fabrizio Ascione (Università degli studi di Napoli Federico II, Italy); Rosa Francesca De Masi (Università degli Studi del Sannio, Italy); Valentino Festa (University of Sannio, Italy); Teresa Iovane and Margherita Mastellone (Università degli Studi di Napoli Federico II, Italy); Silvia Ruggiero (Università degli Studi del Sannio, Italy); Francesco Tariello (Università degli Studi del Molise, Italy); Giuseppe Peter Vanoli (Università degli studi del Molise, Italy)

Projected Inefficiencies of Passive Cooling: Rethinking Urban Heat Mitigation for a Warmer World

Mat Santamouris (University of New South Wales, Australia)

Thursday, June 19 9:00 - 10:30

CS1: Humanized Computing: Citizen Science, Co-creation, and Emerging Technologies for Human-Centric Decisions - PART I

Chairs: Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain), Diego Casado-Mansilla (University of Deusto, Spain)

A Strategy for Enhancing Privacy and Usability of Crowdsourced Data

Dawid Wolosiuk and Milena Vuckovic (VRVis GmbH, Austria); Jan Peters-Anders (AIT Austrian Institute of Technology GmbH, Austria); Felipe Vergara and Ruben Sanchez-Corcuera (University of Deusto, Spain); Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

Developing a Tool for Profiling End-User Participation in Citizen Science to Enhance Engagement

Diego Casado-Mansilla (University of Deusto, Spain); Dorottya Varga (VUB, Belgium); Isabel Casas and Unai Hernández-Jayo (University of Deusto, Spain); Perle Petit (VUB, Belgium); Sofia Garcia-Torres (University of Deusto, Spain); Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

Stress-Testing Citizen Science at Scale: Performance Insights from the GREENCROWD Platform

Felipe Vergara (University of Deusto, Spain); Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain); Mikel Emaldi (University of Deusto, Spain); Cristian Olivares-Rodríguez (Universidad Alberto Hurtado, Chile); Dawid Wolosiuk and Milena Vuckovic (VRVis GmbH, Austria)

Validating a Citizen Observatories enabling Platform by completing a Citizen Science Loop

Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain); Dawid Wolosiuk (VRVis GmbH, Austria); Felipe Vergara, Mikel Emaldi and Ruben Sanchez-Corcuera (University of Deusto, Spain); Alex Barco (Universidad de Deusto, Spain); Milena Vuckovic (VRVis GmbH, Austria); Diego Casado-Mansilla (University of Deusto, Spain); Jan Peters-Anders (AIT Austrian Institute of Technology GmbH, Austria)

Bridging the Gap: Integrating Crowdsourced Data with Structured Analytics for Adaptive EV Charging Infrastructure

Evgenia Kapassa (Neapolis University Pafos, Cyprus & Innov-Acts, Cyprus); Mar-
ios Touloupou (Cyprus University of Technology, Cyprus); Elena Kakoulli (Neapolis
University Pafos, Cyprus)

AmlAire: A Citizen Science and Action Research Initiative for Air Quality Monitoring and Behavioral Change

Ibai Gomez (University of Deusto, Spain); Syed Mohsin Ali Shah (University of
Deusto, Bilbao Spain, Spain); Diego Casado-Mansilla (University of Deusto, Spain);
Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of
Deusto, Spain)

Thursday, June 19 9:00 - 10:30

EMB1: Energy modelling of public buildings and HVAC systems for energy & comfort performance assessment and near real-time control

Chairs: Beñat Arregi (TECNALIA, Basque Research and Technology Alliance
(BRTA), Spain), Roberto Garay-Martinez (Universidad de Deusto, Spain), José L.
Hernández (Fundación CARTIF, Spain)

Processing of occupancy signals for building energy model

Iker Gutierrez (University of the Basque Country, Spain); Roberto Garay-Martinez
(Universidad de Deusto, Spain)

Prediction horizon error analysis in thermal consumption models for con- trol applications

Iñigo Lopez-Villamor (TECNALIA, Basque Research and Technology Alliance (BRTA),
Spain); Olaia Eguiarte (University of the Basque Country, Spain); Beñat Arregi (TECNA-
LIA, Basque Research and Technology Alliance (BRTA), Spain); Antonio Garrido Mari-
juan (TECNALIA, Spain); Roberto Garay- Martinez (Universidad de Deusto, Spain)

Application of resistance-capacitance (RC) models to predict soil surface temperature: A case study in the Netherlands

Iñigo Lopez-Villamor (TECNALIA, Basque Research and Technology Alliance
(BRTA), Spain); Olaia Eguiarte (University of the Basque Country, Spain); Beñat Ar-
regi (TECNALIA, Basque Research and Technology Alliance (BRTA), Spain); Roberto
Garay-Martinez (Universidad de Deusto, Spain); Juan Pablo Aguilar and Leonardo
Duarte (Delft University of Technology, The Netherlands)

Impact of pavement material properties on radiant heat exchanges with the built environment

Beñat Arregi, Iñigo Lopez-Villamor and Diego Zamora-Sánchez (TECNALIA,
Basque Research and Technology Alliance (BRTA), Spain); Roberto Garay- Martinez
(Universidad de Deusto, Spain)

Thursday, June 19 9:00 - 10:30

IoT4: Special Session on Artificial Intelligence and Deep Learning applied to Smart Environments

Chairs: Cosimo Distante (CNR, Italy), Teodoro Montanaro (University of Salento, Italy)
Deep Learning for UAV Classification: Impact of Noise and Multipath Fading

in RF Signals

Prajay Podder, Maciej Zawodniok and Sanjay Madria (Missouri University of Science and Technology, USA)

Multi-Dimensional IoT-Based Energy Management Approach for Smart Homes: A Unified Model for Comfort and Energy Efficiency

Muhammad Ans, Teodoro Montanaro and Ilaria Sergi (University of Salento, Italy); Ahmad Alsharoa (Missouri University of Science and Technology, USA); Miriam Pezzuto (Parsec326, Italy); Luigi Patrono (University of Salento, Italy)

Comparative Analysis of YOLOv7 with Modified Mosaic Augmentation Against YOLOv8-11 for Object Detection in Unbalanced Datasets

Boris Gašparović (University of Rijeka, Croatia); Jonatan Lerga (University of Rijeka, Croatia & University of Rijeka, Center for Artificial Intelligence and Cybersecurity, Croatia)

Sparse Temporal AutoEncoder for ECG Anomaly Detection

Radia Daci (Consiglio Nazionale delle Ricerche, Italy); Abdelmalik Taleb-Ahmed (IEMN DOAE UMR CNRS 8520, Université Polytechnique Hauts-de-France, Algeria); Cosimo Distanto (CNR, Italy); Luigi Patrono (University of Salento, Italy)

Machine Learning in Breast Cancer Diagnosis: Model Comparison and Practical Implications

Nemanja Sepa (University of Novi Sad, Serbia); Milovan Medojevic (The Institute for Artificial Intelligence Research and Development of Serbia & EnergyPulse DOO, Serbia); Aleksandar Rikalovic (University of Novi Sad, Serbia)

Digital Plan - Civil Protection Plan Digitalization through Internet of Things Decision Support System based Platform

Petar Šolić (University of Split & FESB, Croatia); Marijana Čular (RERA, Croatia)

Hybrid Condition Monitoring for IoT Applications

Nikola Marković (The Institute for Artificial Intelligence Research and Development of Serbia, Serbia); Milovan Medojević (The Institute for Artificial Intelligence Research and Development of Serbia & EnergyPulse DOO, Serbia)

Thursday, June 19 11:30 - 13:00

BD2: Smart Systems and Energy Optimization in Buildings

Chairs: Tullio de Rubeis (University of L'Aquila, Italy), Teresa Iovane (Università degli Studi di Napoli Federico II, Italy)

Assessment of an adaptive control system for heating systems in multi-family buildings

Alicja Siuta-Olcha, Tomasz Cholewa and Martyna Bocian (Lublin University of Technology, Poland); Krawczyk D A (Bialystok University of Technology, Poland); Bożena Babiaryz (Rzeszow University of Technology, Poland); Anna Werner-Juszczuk and Beata Sadowska (Bialystok University of Technology, Poland); Joanna Krasoń (Rzeszow University of Technology, Poland); Piotr Rynkowski and Dorota Gawryluk (Bialystok University of Technology, Poland); Przemysław Miąsik (Rzeszow University of Technology, Poland); Maciej Kłopotowski (Bialystok University of Technology, Poland)

Impact of building envelope retrofit on primary energy consumption for space cooling with climate change

Francesca Villano (Università degli Studi del Sannio, Italy); Fabrizio Ascione (Università degli studi di Napoli Federico II, Italy); Tomasz Cholewa (Lublin University of Technology, Poland); Rosa Francesca De Masi (Università degli Studi del Sannio, Italy); Gerardo Maria Mauro (Università degli Studi di Napoli Federico II, Italy); Silvia Ruggiero (Università degli Studi del Sannio, Italy)

Hourly scaling down of an in-house annual energy demand estimation method: A novel approach for hourly heating consumption analysis

Giuseppe Aruta (Università degli Studi di Napoli Federico II, Italy); Fabrizio Ascione and Nicola Bianco (Università degli studi di Napoli Federico II, Italy); Teresa Iovane and Margherita Mastellone (Università degli Studi di Napoli Federico II, Italy); Sandro Nizetic (University of Split, FESB, Croatia); Francesco Tariello (Università degli Studi del Molise, Italy); Giuseppe Peter Vanoli (Università degli studi del Molise, Italy)

Holistic framework for household energy management services

Georgios Kormpakis (National Technical University of Athens, Greece); Alexios Lekidis (University of Thessaly, Greece); Ioannis Papias and Nikos Dimitropoulos (NTUA, Greece); Filippos Serepas (Holistic sa, Greece); Vangelis Marinakis (National Technical University of Athens, Greece)

Tuning Energy Performance Certificate and Smart Readiness Indicator to achieve full potential: methods used in tunES Project

Tomasz Cholewa (Lublin University of Technology, Poland); Laura Canale (University Mercatorum & University of Cassino and Southern Lazio, Italy); Rune Korsholm Andersen (Technical University of Denmark, Denmark); Georg Vogt (Empirica GmbH Bonn, Germany); Martyna Bocian and Alicja Siuta- Olcha (Lublin University of Technology, Poland); Giorgio Ficco (University of Cassino and Southern Lazio, Italy); Luca Zaniboni (Technical University of Denmark, Denmark); Tatiana Novikova (Empirica GmbH Bonn, Germany); Amelia Staszowska, Marzenna Róża Dudzińska and Sławomira Maria Dumala (Lublin University of Technology, Poland); Jorn Tofthum and Orgun Berk Kazanci (Technical University of Denmark, Denmark); Marco Dell'Isola (University of Cassino and Southern Lazio, Italy)

EFI-DSS: A Machine Learning-based Decision Support System for Energy Efficiency Investments in Buildings

Vasilis Michalakopoulos, Georgios Kormpakis, Sotiris Pelekis, Vagelis Karakolis, Spiros Mouzakitis and Dimitris Askounis (National Technical University of Athens, Greece)

Performance Optimization of Air-Solar Dual-Source Heat Pumps: Comparative and Parametric Analysis

Miriam di Matteo, Costanza Vittoria Fiorini and Andrea Vallati (Sapienza University of Rome, Italy)

Thursday, June 19 11:30 - 13:00

CS2: Humanized Computing: Citizen Science, Co-creation, and Emerging Technologies for Human-Centric Decisions - PART II

Chairs: Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain), Diego Casado-Mansilla (University of Deusto, Spain)

An Evaluation of Large Language Models for Code Optimization

Endika Tapia, Unai Lopez-Novoa, Leonardo Sastoque Pinilla and Luis Norberto López de Lacalle (University of the Basque Country, Spain)

An Exploratory Study of Digital Literacy and Proficiency Challenges in Citizen-Based Initiatives

Milena Vuckovic and Dawid Wolosiuk (VRVis GmbH, Austria); Ruben Sanchez-Corcua (University of Deusto, Spain); Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

Developing Science and Technology in Rural Areas Using Remote Experiments. The Experience of Project R3: Rural, Remote and Real

Javier Garcia-Zubia (University of Deusto, Spain & Universidad de Deusto, Spain); Veronica Canivell, Marcelo Leslabay, Cristina Gimenez-Elorriaga, Nora Gallastegi, Giovanna Lani and Ander Herrero-Pascual (University of Deusto, Spain); Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain); Luis Rodriguez-Gil (LabsLand, Spain)

Visual Literacy in the Age of Generative AI: Lessons from a Public Quiz and Student Workshops

Martina Dragija Ivanović (University of Zadar, Croatia)

A Transformer-Based Approach to Analyzing Public Opinion and Political Trends

Jon Gardeazabal-Gutiérrez (Spain); Miguel Fernandez-de-Retana (Basque Center for Applied Mathematics (BCAM), Spain); Aritz Bilbao-Jayo (University of Deusto, Spain)

Semantic Usability of Digital Images - Ontology-Based Readability Assessment

Zeljka Tomasovic and Marijana Tomić (University of Zadar, Croatia)

Thursday, June 19 11:30 - 13:00

EMB2: Energy modelling of buildings and HVAC systems for energy & comfort performance assessment and near real-time control - PART I

Chairs: Roberto Garay-Martinez (Universidad de Deusto, Spain), Beñat Arregi (TECNALIA, Basque Research and Technology Alliance (BRTA), Spain)

Energy consumption in a multi-family residential building

Martyna Bocian, Tomasz Cholewa and Alicja Siuta-Olcha (Lublin University of Technology, Poland); Krawczyk D A (Bialystok University of Technology, Poland); Bożena Babiaryz (Rzeszow University of Technology, Poland); Anna Werner-Juszczuk and Beata Sadowska (Bialystok University of Technology, Poland); Joanna Krasoń (Rzeszow University of Technology, Poland); Piotr Rynkowski and Dorota Gawryluk (Bialystok University of Technology, Poland); Przemysław Miąsik (Rzeszow University of Technology, Poland); Maciej Kłopotowski (Bialystok University of Technology, Poland)

Optimization of Life Cycle Energy in an Educational Building: A Case Study of an Elementary School in Niš

Vladan S. Jovanović (University of Niš, Serbia); M. Stojilkovi (University of Nis, Serbia); Marko Ignjatović and Dušan J. Randelović (University of Niš, Serbia); Aleksandar Andjelkovic (University of Novi Sad, Serbia)

Energy Efficiency and Indoor Microclimate in Balloon Halls: A Case Study on Thermal Stability and Ventilation Simulation

Dušan J. Ranđelović, Miomir Vasov, Dragan Kostić, Vladan S. Jovanović and Jelena Savić (University of Niš, Serbia); Aleksandar Andjelkovic (University of Novi Sad, Serbia)

Comparison between PMV and modified PMV indices in the context of thermal comfort assessment and predicted productivity loss

Anton Kerčov (University of Belgrade, Serbia); Tamara Bajc (University of Belgrade Faculty of Mechanical Engineering, Serbia); Maja Todorović (University of Belgrade, Serbia)

Phase Change Materials as Solution for Cooling Energy Efficiency and Thermal Comfort in Mosque Buildings

Ahmet Yuksel (Yalova University, Turkey); Muslum Arici (Kocaeli University, Turkey); Michal Krajčík (Slovak University of Technology, Slovakia); Mihriban Civan (Kocaeli University, Turkey); Sandro Nizetic (University of Split, FESB, Croatia); Hasan Karabay (Engineering Faculty, Kocaeli University, Turkey)

Optimization of the SMAW Welding Process in Carbon Steel Pipes for District Heating Systems

Vanessa Estremera Carrera (Public University of Navarre, Spain); Sergio Ruiz González (University of La Rioja (Spain), Spain); Ruben Lostado-Lorza (University of La Rioja, Spain); Carlos Berlanga-Labari (Public University of Navarre, Spain)

Thursday, June 19 11:30 - 13:00

IoT5: Special Session on Big Data and IoT Special

Chairs: Teodoro Montanaro (University of Salento, Italy), Davide Cantoro (University of Salento, Italy)

Performance of Edge and Cloud-based Large Language Models in Smart Spaces

Aygün Varol (Tampere University, Finland); Naser Hossein Motlagh (University of Helsinki, Finland); Mirka Leino (Satakunta University of Applied Sciences, Finland); Johanna Virkki (Tampere University, Finland)

A Real-Time IoT-Based System for Solar Energy Forecasting and Automated Anomaly Notifications

Giuseppe Del Fiore, Giacomo Erroi, Maria Luisa Belcuore, Ilaria Sergi, Teodoro Montanaro and Luigi Patrono (University of Salento, Italy)

Enhancing Network Observability and QoS Provisioning for Industrial Scenarios: A Unified Architecture with Event-Triggered Server Logic

Géza Szabó (Ericsson Research, Hungary); Boldizsár Bunda (Ericsson Hungary, Hungary); József Varga (Ericsson Research, Hungary); Marcell Balogh (Ericsson Research)

Combining IoT and AI technologies to improve safety in noisy industrial environments

Mattia Cotardo, Davide Rollo, Ilaria Sergi, Teodoro Montanaro and Giuseppe Del Fiore (University of Salento, Italy); Raffaele Mariconte and Claudia Giliberti (Inail, It-

aly); Luca Landi (University of Perugia, Italy); Luigi Patrono (University of Salento, Italy)
Data Harmonization as a Keystone for IoT-Enabled Data Spaces: Challenges, Techniques, and Future Trends

Josu Diaz-de-Arcaya (TECNALIA, Basque Research and Technology Alliance (BRTA), Spain); Asier Garcia-Perez (TECNALIA, Basque Research & Technology Alliance (BRTA), Spain); Lander Bonilla (Tecnalia, Basque Research and Technology Alliance (BRTA), Spain & Deusto University, Spain); Raúl Miñón and Ana Isabel Torre-Bastida (TECNALIA, Basque Research and Technology Alliance (BRTA), Spain)

EcoSentinel: Towards A Techno Natural Internet of Things Approach for Large Scale Sustainable Remote Monitoring of Soil and Wilderness

Joan Navarro (La Salle Campus Barcelona, Universitat Ramon Llull, Spain); Alan Briones (La Salle Campus BCN - Ramon Llull University, Spain); Agustin Zaballos (Enginyeria La Salle - Universitat Ramon Llull, Spain); Daniël Groen, Marjolein Helder and Hadi Rajaei (Plant-e, The Netherlands); Jaume Anguera (Ignion & Universitat Ramon Llull, Spain); Aurora Andújar (Ignion, Spain); Armando Carpaneto and Enrica Roccotiello (University of Genova, Italy); Leonardo Lizzi and Davide Brunelli (University of Trento, Italy); Cécile Belleudy (Université Côte d'Azur, Nice, France); Fabien Ferrero (Université Cote d'Azur, CNRS, LEAT & CREMANT, France)

Thursday, June 19 15:30 - 17:00

BD3: Advanced Materials and Technologies for Thermal Management

Chairs: Tomasz Cholewa (Lublin University of Technology, Poland), Gerardo Maria Mauro (Università degli Studi di Napoli Federico II, Italy)

Structural Optimization of Internal Heat Sources and its effect on the Melting Behavior of Solid PCM in a Single Tank

Hongtao Li (Hebei University of Science and Technology, China)

Effects of pyrolysis conditions and biochar concentrations on promoting ethanol production from corn straw fermentation

Xiaohong Su, Xuguang Wang, Wei Liu, Ruru Huo and Jia Lu (Heilongjiang Energy and Environment Research Institute, China)

Experimental Evaluation of Thermal Conductivity of Straw Fiber Insulation Panels as a Function of the Relative Humidity

Eugenia Rossi di Schio (Università di Bologna, Italy); Vincenzo Ballerini (Alma Mater Studiorum University of Bologna, Italy); Tawfiq Chekifi (CDER- URAER & Research Centre in Industrial Technologies CRTI, Algeria); Michele Mandes and Razi Khan (Alma Mater Studiorum University of Bologna, Italy); Giampietro Fabbri (Alma Mater Studiorum - University of Bologna, Italy); Paolo Valdiserri (Università di Bologna, Italy)

Experimental Evaluation of Hemispherical Solar Still Performance Using Aluminum and Galvanized Steel Floral Ring Inserts

Reski Khelifi (URAER-CDER, Algeria); Tawfiq Chekifi (CDER-URAER & Research Centre in Industrial Technologies CRTI, Algeria); Eugenia Rossi di Schio and Paolo Valdiserri (Università di Bologna, Italy); Khaled Touafek (Renewable Energies Applied Research Unit, Algeria)

Ventilated façade as building retrofit solution: preliminary thermal model and comparison of energy performance in different climatic regions

Costanza Vittoria Fiorini, Miriam di Matteo, Filippo Tovoli and Andrea Vallati (Sapienza University of Rome, Italy)

A novel shape stabilized phase change material based on Co/Zn co-modified porous carbon for thermal storage and photothermal conversion

Junchi Wang (Shandong Jianzhu University, China); Xiaoling Ma (University of Birmingham, United Kingdom (Great Britain)); Ndzonelelo Bingwa (University of South Africa, South Africa); Rongren Liu, Yue Xu, Baoshu Tang, Qiangqiang Xiao, Guoning Li and Hui Li (Shandong Jianzhu University, China)

Thursday, June 19 15:30 - 17:00

EMB3: Energy modelling of buildings and HVAC systems for energy & comfort performance assessment and near real-time control - PART II

Chairs: Beñat Arregi (TECNALIA, Basque Research and Technology Alliance (BRTA), Spain), Roberto Garay-Martinez (Universidad de Deusto, Spain)

Operational Characteristics of Multi-Energy Complementary Heating System in Medium-Deep Ground Source Heat Pump Applications

Duotong Lin, Shuai Huang, Jiankai Dong and Yiqiang Jiang (Harbin Institute of Technology, China)

Design, Fabrication, and Evaluation of Novel 3D-Printed Thermal Metamaterials for Energy Optimization in Sustainable Buildings

Sergio Ruiz González (University of La Rioja (Spain), Spain); Vanesa Estremera Carrera (Public University of Navarre, Spain); Ruben Lostado-Lorza and Saúl Iñiguez Macedo (University of La Rioja, Spain)

Comprehensive Revision of the Feasibility of Impact Monitoring of Possible Energy Districts

José L. Hernández and Andrea Gabaldón (Fundación CARTIF, Spain); Roberto Garay-Martinez, Ainhoa Arriazu and Asier Divasson (Universidad de Deusto, Spain)

Automated Assessment of Building Carbon Footprint Through the Integration of Material Emission Factor Databases in a BIM Environment

Sanja Dubljević (University of Novi Sad, Serbia); Aleksandra Stefanović (NET ZERO DOO, Serbia); Bojan Tepavčević (University of Novi Sad, Serbia); Miljan Šunjević (Science Associate, Serbia); Aleksandar Andjelkovic (University of Novi Sad, Serbia)

Digital Transformation of Public Building Green Remodeling: A UBEM-Based Evaluation Framework

Suin Lee (Korea Institute of Civil Engineering and Building Technology, Korea (South)); Jae-Sik Kang (Korea Institute of Civil Engineering and Building Technology(KICT), Korea (South)); Hosang Ahn (Korea Institute of Civil Engineering and Building Technology, Korea (South))

Thursday, June 19 15:30 - 17:00

IoT6: Session on Blockchain applications and Cybersecurity solutions for IoT Systems

Chairs: Teodoro Montanaro (University of Salento, Italy), Luca Mannella (Politecnico di Torino, Italy)

Dynamic Temporal Positional Encodings for Early Intrusion Detection in IoT

Ioannis Panopoulos, Maria-Lamprini Bartsioka and Sokratis Nikolaidis (National Technical University of Athens, Greece); Stylianos Venieris (Samsung AI, United Kingdom (Great Britain)); Dimitra I Kaklamani and Iakovos S. Venieris (National Technical University of Athens, Greece)

U-FIRST: Transformer-based Framework for Secure and Intelligent UAV Communication in Battlefield Environment Underlying 5G

Lakshin Pathak, Shivanshi Bhatt, Shreya Bhatia and Rajesh Gupta (Nirma University, India); Sudeep Tanwar (Nirma University & Institute of Technology, India); Jitendra Bhatia (Nirma University, India); Kashif Saleem (King Saud University, Saudi Arabia); Joel J. P. C. Rodrigues (Senac Fac of Ceará, Brazil)

DL-based Framework for Detecting Malicious Proof-of-Stake Blocks in Gaming Transactions

Jay Gor, Karm Dave, Neel Kaushikkumar Patel, Keyaba Gohil and Rajesh Gupta (Nirma University, India); Sudeep Tanwar (Nirma University & Institute of Technology, India); Kashif Saleem (King Saud University, Saudi Arabia); Joel J. P. C. Rodrigues (Senac Fac of Ceará, Brazil)

Secure Runtime Reconfiguration of FPGAs via Lightweight Authenticated Encryption for IoT Systems

Lars Kadel and Hassan Nassar (Karlsruhe Institute of Technology, Germany); Lars Bauer (Germany); Joerg Henkel (KIT, Germany)

Large-Scale (Semi-)Automated Security Assessment of Consumer IoT Devices - A Roadmap

Pascal Schöttle, Matthias Janetschek, Florian Merkle, Martin Nocker and Christoph Egger (MCI - the Entrepreneurial School, Austria)

Industrial IoT cybersecurity: a bibliometric analysis

Ignacio José Dasso (Nantes Université, France & IETR, France); Sébastien Maudet (Nantes Université & IETR UMR 6164, France); Renzo E Navas (IMT Atlantique, France); Guillaume Andrieux (University of Nantes & IETR Laboratory, France)

Friday, June 20 9:00 - 10:30

MLE: Machine Learning and Statistics in Electronics

Chair: Malinka Ivanova (Technical University of Sofia, Bulgaria)

LLM-based PID controller optimization

Ilija Kamenko and Slobodan Ilic (The Institute for Artificial Intelligence Research and Development of Serbia, Serbia); Velimir Congradac (University of Novi Sad, Serbia)

Investigation of Ceramic Bearing Systems With an Intelligent Measuring

System Using Statistics and Machine Learning

Valentin Petrov Tsenev, Prof. and Teodor Draganov (Technical University of Sofia, Bulgaria)

Improving Handwritten Character Recognition Using YOLO Algorithms

Zrinka Gligo and Marija Srdanović (University of Split, Croatia); Sven Gotovac (University of Split & FESB, Croatia); Linda Vickovic, Tamara Grujic and Ana Kuzmanić Skelin (University of Split, Croatia)

Large and Small Language Models in Manufacturing and Electronics

Malinka Ivanova (Technical University of Sofia, Bulgaria); Galina Bogdanova (Institute of Mathematics and Informatics at the Bulgarian Academy of Science, Bulgaria); Csaba Zoltán Kertész (Transilvania University of Brasov, Romania)

Diving Deep: Comparative Analysis and Design of Neural Network Based Algorithm Selection for Underwater Image Processing

Nihitha Malayarukil and Hai Nam Tran (University of Brest, France); Barbara Džaja (University of Split, Croatia); Vincent Rodin (Université de Bretagne Occidentale, France)

Transient Analysis of a Single-Channel Service System Operation with Positive and Negative Messages

Wojciech M Kempa and Patrycja Grabarz (Silesian University of Technology, Poland)

Friday, June 20 9:00 - 10:30

SC2: Smart City - Aquatic Applications

Chair: Duje Čoko (University of Split, FESB, Croatia)

Exploring the role of digital technology in the waterborne passenger mobility

Laura Pirrone, Arianna Bionda, Sergio Terzi and Andrea Ratti (Politecnico di Milano, Italy)

Ultrasound-Based Indirect Water Temperature Measurement Using Machine Learning

Ander Palacios (University of Deusto, Spain); Hugo Landaluce (Universidad de Deusto, Spain); Laura Arjona (University of Deusto, Spain); Lola Fariñas (University of Deusto and Ikerbasque, Basque Foundation for Science, Spain)

Fading Colours: Investigating Spectral Attenuation in Underwater Photography with Distance

Barbara Džaja, Hrvoje Turic and Vladimir Plestina (University of Split, Croatia)

System for Automatic Vessel Detection and Tracking in the Port of Split

Sven Gotovac (University of Split & FESB, Croatia); Paula Muslim and Dunja Božić-Štulić (University of Split, Croatia)

Integration of Ship-to-Grid Technology in Maritime Transport: A Case Study of the Island of Brač

Filip Jurić, Sandra Divković and Hrvoje Mikulčić (University of Zagreb, Croatia)

Friday, June 20 9:00 - 10:30

SDEN1: Smart Electrical Networks and AI Integration

Chair: Nils Jakob Johannesen (University of South-Eastern Norway, Norway)

Applications of AI in Modern/Smart Power Grids: A Short Review

Emina Hasković, Zakira Jašarević, Samir Avdaković and Maja Muftić Dedović (University of Sarajevo, Bosnia and Herzegovina); Aida Žugor (Institute of Advanced Systems and Technologies d.o.o Sarajevo, Bosnia and Herzegovina)

Predicting Hourly PV Production of FESB Solar Plant Using SKTIME Library

Joško Novaković (FESB, Croatia); Damir Jakus (University of Split & Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Croatia); Josip Vasilj (University of Split, Croatia); Stipe Puđa (FESB, Croatia)

Model for recognizing patterns and influencing factors between water in-flow, hydroelectric power generation and market electricity prices

Zoran Tabak (Mostar, Bosnia and Herzegovina); Tomislav Capuder (Zagreb, Croatia)

Leveraging Quasi-Dynamic Grid Analysis of Industrial Loads: A 132 kV Norwegian Case Study

Oleksandra Ishchenko and Nils Jakob Johannesen (University of South-Eastern Norway, Norway); Le Nam Hai Pham (56 Kjølnes Ring & University of South-Eastern Norway, Norway); Carlos Pfeiffer (University College in South East Norway, Norway)

Impact of deregulation on market efficiency and quality of services in the electricity sector perfect competition vs regulated monopolist -

Zoran Tabak (Mostar, Bosnia and Herzegovina)

Optimized Wind Farm Power Scheduling Using Hybrid Battery Energy Storage Systems

Jayachandra Malavatu and Ankit Kumar (University of Agder, Norway)

Friday, June 20 11:30 - 13:00

H1: Artificial Intelligence and Advanced Technologies in Healthcare

Chair: Ivana Šolić (University Hospital Split, Croatia)

A Deep Learning Approach to Multi-Class ECG Interpretation

Elzana Dupljak and Zhilbert Tafa (International Balkan University, Macedonia, the former Yugoslav Republic of)

LLM-Twins: A Large Language Model driven trusted Cyber Twin framework for Healthcare 5.0 ecosystems

Pronaya Bhattacharya (Amity University, Kolkata, India); Ebrahim Abdulla Mattar (University of Bahrain, Bahrain); Pushan Kumar Dutta (Amity University Kolkata, India & Amity School of Engineering and Technology, India); Joel J. P. C. Rodrigues (Senac Fac of Ceará, Brazil)

Web Content and Anxiety in Today's Society

Filip Mustac (University Hospital Centre Zagreb, Croatia); Maja Škarić and Marko Luka Bošković (Neuropsychiatric Hospital Popovača, Croatia); Karlo Papić (Community Health Centre Zagreb, Croatia); Tali Horvat (Practice of General Medicine, Croatia); Martina Matovinović and Darko Marčinko (University Hospital Centre Zagreb, Croatia)

Design and development of a wearable device for real-time health monitoring and telemedicine

Vincenzo Randazzo and Matteo Reineri (Politecnico di Torino, Italy); Eros GA Pasero (Politecnico of Turin, Italy & Neuronica Lab, Italy)

Scoping Review of Technology Enabled Healthcare Integration - Towards Sustainable Care

Tatjana Loncar-Turukalo (University of Novi Sad, Serbia); Eftim Zdravevski (University of Ss. Cyril and Methodius - Skopje, Macedonia, the former Yugoslav Republic of); Ana Madevska Bogdanova (Ss. Cyril and Methodius University, Macedonia, the former Yugoslav Republic of); Milica Solarevic (University of Novi Sad, Serbia); Fedor Lehocki (Slovak University of Technology, Slovakia); Vladimir Trajkovic (Ss. Cyril & Methodius University, Faculty of IT, Macedonia, the former Yugoslav Republic of)

Health Data and Information Ownership: Cybersecurity, Protection and Privacy Perspectives

Hrvoje Belani (Ministry of Health & University of Split, Croatia);

Toni Perković and Petar Šolić (University of Split, FESB, Croatia); Želka Karin and Anamarija Jurčev Savičević (Teaching Institute for Public Health of Split-Dalmatia County, Split, Croatia)

Friday, June 20 11:30 - 13:00

SC3: Smart City - Environmental Perspective

Chair: Ljiljana Šerić (University of Split, FESB, Croatia)

Geolocalizing Pixels on PTZ Camera Imagery in Natural Environments using Deep neural network

Ljiljana Šerić, Antonia Bartulović, Jakov Bejo and Ivana Damjanović (University of Split, FESB, Croatia)

Smart Environmental Monitoring of Marine Pollution using Edge AI

Mohamed Moursi, Norbert Wehn and Bilal Hammoud (RPTU Kaiserslautern-Landau, Germany)

Remote Sensing for Assessing Vegetation Fuels in Wildfire Risk and Propagation Modelling

Sven Gotovac (University of Split & FESB, Croatia); Paula Muslim (University of Split, Croatia); Ante Ivanović (University of Split - FESB, Croatia); Ana Šarić Gudelj (University of Split, Croatia); Ante Sanader (Croatian Firefighting Association Split, Croatia)

ECORIS - Environmental Control and Observation - River Information System of Bosnia and Herzegovina

Zoran Tabak (Mostar, Bosnia and Herzegovina); Karlo Guštin (Business Development, Croatia)

Smart Charging of V2G-Enabled EVs in Positive Energy Districts with Shared Energy Storage

Jernej Hribar (Jozef Stefan Institute, Slovenia); Mihael Mohorcic (Jozef Stefan Institute & Jozef Stefan International Postgraduate School, Slovenia); Andrej Čampa (Comsensus, Slovenia)

Evaluation of GEO Satellite NB-IoT Performance in Urban Mobility Scenarios

Toni Perkovic (University of Split, FESB, Croatia); Josip Sabic (University of Split, Croatia); Nikola Brebrić (Hrvatski Telekom, Croatia); Ivo Stancic (University of Split, Croatia); Petar Solic (University of Split & FESB, Croatia)

WORKSHOPS

Workshop: Meet the Editors

Useful insights from journal Editors

Mat Santamouris

Editor in Chief, Energy and Buildings (Elsevier)

Agis Papadopoulos

Associate Editor in Energy and Buildings (Elsevier)

Fabrizio Ascione

Editorial Board Member in Energy and Buildings (Elsevier)

Moderator

Sandro Nižetić

Editorial Board Member in Energy and Buildings (Elsevier)



Mat Santamouris



Agis Papadopoulos



Fabrizio Ascione



Sandro Nižetić

The topics to be discussed cover at least briefly: writing a potential successful scientific manuscript, selection of a right journal and their metrics, various types of paper submission, selecting and using the right references, similarity and plagiarism, correct novelty reasoning and presentation of the proposed methods and the results, proper conclusions writing, how to handle the reviewing process, final proofing, presentation and promotion of the published paper. Examples of successful publications will be given, with analysis of the features leading to their high impacts. The panels session is going to be followed by dedicated consultations of specific and individual features with close interaction with the audience.

SYMPOSLIA

SYMPOSIUM on Internet of Things

Symposia organizer:
Luigi Patrono,
University of Salento, Italy



The main goal of the Symposium is to present and discuss recent advances in the area of the Internet of Things, Embedded systems, Intelligent Systems and Smart Environments that are becoming research topics more and more interesting for both academia and industry. This symposium will provide an opportunity for scientists, engineers and researchers to discuss new applications, design problems, ideas, solutions, research and development results, experiences and work-in-progress activities in this important technological area.

International Symposium on Internet of Things includes:

- Special Session on Artificial Intelligence and Deep Learning applied to Smart Environments
- Special Session on Big Data and IoT
- Special Session on Blockchain applications and Cybersecurity solutions for IoT Systems
- Workshop on IoT and AI for sustainable and smart services in healthcare
- Poster Session on RFID/IoT Research Projects: Hardware and Software Solutions in Focus

Special Session on Artificial Intelligence and Deep Learning Applied to Smart Environment

Organizers:

Cosimo Distante,
CNR, Italy

Abdelmalik Taleb-Ahmed,
University Polytechniques Hauts de France,
Valenciennes, France

Abdenour Hadid,
Sorbonne, Abou Dabi, UAE



Cosimo Distante



Abdelmalik Taleb-Ahmed



Abdenour Hadid

Today interconnected objects are everywhere, they are a formidable source of data and their processing allow to boost smart and interacting environment capabilities. To this aim, Artificial Intelligence (AI) and Machine Learning (ML) play an important role in accomplishing this achievement. In the latest decade AI and ML have received great attention to solve difficult and complex problems in smart and interactive environments, and their advances brought impressive progresses in several fields such as medicine, e-health, healthcare, neuroscience, brain-computer interface, neuro-feedback, robotics and automotive, biometrics, etc. In this context, the advanced learning techniques such as deep learning, reinforcement learning, deep reinforcement learning, statistical learning have shown their effectiveness to solve various problems of detection, classification, clustering, segmentation, control, diagnosis, etc.; and thus, becomes useful solutions to be investigated more for other open problems.

Special Session on Big Data and IoT



Organizer:
Aitor Almeida,
Deusto University, Spain

With the increase of the adoption of IoT devices in multiple domains, the data processing and analysis requirements have grown similarly. IoT devices can be found in multiple environments (homes, industrial installations, office spaces...), with heterogeneous sensors providing multimodal continuous data streams. New approaches in Big Data, Data Analytics, Open Data, Behavior Analysis, Semantic Location Services and Artificial Intelligence are needed to properly process and manage those data streams.

The main goal of the Special Session is to present and discuss recent advances in the area of data analysis, management and processing in IoT. This Special Session will provide an opportunity for scientists, engineers and researchers to discuss new applications, design problems, ideas, solutions, research and development results, experiences and work-in-progress activities in this important technological area.

Accepted, and presented papers will be published in the conference proceedings and submitted to IEEE Xplore as well as other Abstracting and Indexing (A&I) databases. Authors of selected best papers will be invited to submit an extended version of their manuscripts for publication in a special issue of some international and indexed journals.

Special Session: on Blockchain applications and Cybersecurity solutions for IoT Systems



Luca Mannella

Organizers:

Luca Mannella,
Politecnico di Torino, Italy

Teodoro Montanaro,
University of Salento, Italy



Teodoro Montanaro

The main goal of the Special Session is to present and discuss recent advances in two of the most discussed areas of the last decades applied to the IoT context: Distributed Ledger Technologies (DLT) applications and cybersecurity solutions. This Special Session will provide an opportunity for scientists, engineers and researchers working in the areas of cyber security or DLT technologies to discuss new applications, design problems, ideas, solutions, research and development results, experiences and work-in-progress activities in these technological area. Furthermore, innovative combining research of cyber security applied to the DLTs, or DLTs used in cybersecurity are encourage.

Accepted, and presented papers will be published in the conference proceedings and submitted to IEEE Xplore as well as other Abstracting and Indexing (A&I) databases. Authors of selected best papers will be invited to submit an extended version of their manuscripts for publication in a special issue of some international and indexed journals.

Special Session on Innovative solutions based on IoT and AI to improve Healthy and Active Aging

Organizers:

Luigi Patrono,
University of Salento, Italy

Erika Rovini
University of Florence, Italy

Aitor Almeida
Deusto University, Spain



Luigi Patrono



Erika Rovini



Aitor Almeida

Artificial Intelligence (AI) and Internet of Things (IoT) have numerous applications in healthcare, and integrating them is becoming a common practice. The implementation of innovative solutions in healthcare is nowadays fundamental, AI and IoT are therefore strong drivers of the digital transformation. Combining AI and IoT will improve operational effectiveness and efficiency in the Digital Health domain. Specifically, new AI and IoT solutions can fully support medical staff, patients, and inventory tracking, chronic disease management, health and wellbeing management, drug management, emergency room wait time reduction, remote health control. The potential obtained combining AI and IoT is able to create a pervasive environment for monitoring patient health and safety as well as improving how physicians deliver care. It can also boost patient engagement and satisfaction by allowing them to spend more time in the comfort of their residence and interact with their care centers whenever needed.

SYMPOSIUM on RFID, Electromagnetics, and Electronics for IoT Devices The Hardware Side of IoT -

Symposia organizer:
Luca Catarinucci,
University of Salento, Italy



This year's symposium is dedicated to RFID, electronics, and electromagnetic technologies—the building blocks of IoT solutions. We aim to highlight pioneering advancements and innovative applications of these technologies in IoT, attracting experts, engineers, and researchers. This is an exceptional opportunity for attendees to network, exchange ideas, and explore new advancements in a dynamic environment. Special focus is also on the circuit-related aspects of RFID and IoT technologies, inviting submissions that address innovative circuit design, integration, and optimization challenges that are pivotal for advancing these systems.

International Symposium on RFID, Electromagnetics, and Electronics for IoT Devices The Hardware Side of IoT includes:

Special Sessions:

- Special Session on Technology for Life: revolutionizing Work, Health monitoring, and Safety with modern Electronics & Backscattering Communications
- Special Session on Innovative Antennas and Intelligent Systems: Shaping the Future of RFID Applications
- Special Session on Gameful Technology
- Special Session on Electromagnetic Innovation through Additive and Advanced Manufacturing Technologies
- Special Session on Exploring Hardware Aspects of Low Power Wireless Communication for IoT Applications Across Asia
- Special Session on Circuits and Systems for Embedded AI - The Hardware Backbone of IoT
- Poster Session on RFID/IoT Research Projects: Hardware and Software Solutions in Focus

Special Session on Technology for Life: revolutionizing Work, Health monitoring, and Safety with modern Electronics & Backscattering Communications



Andrea Ria

Organizers:
Andrea Ria,
University of Pisa, Italy

Andrea Motroni,
University of Pisa, Italy



Andrea Motroni

Internet of Things (IoT) and backscattering technologies such as Radio Frequency IDentification (RFID) have experienced significant improvements in the last decade thanks to the development of modern electronics solutions focused on low-power devices and ICs and innovative materials. Building on this solid physical layer, numerous IoT solutions have been crafted to address diverse human needs revolutionizing productivity and resource and energy management, wellness, safety and security, where IoT has been pivotal. This special session aims at retrieving the latest cutting-edge advancements in terms of hardware development, software or novel applications.

Special Session on Innovative Antennas and Intelligent Systems: Shaping the Future of RFID Applications



Giovanni Andrea Casula

Organizers:

Giovanni Andrea Casula,
University of Cagliari, Italy

Luciano Mescia
Politecnico di Bari, Italy



Luciano Mescia

The rapid evolution of Radio Frequency Identification (RFID) technology has catalyzed transformative advancements across industries, enabling efficient wireless tracking, sensing, communication, monitoring, and authentication in logistics, healthcare, IoT, retail, smart cities and beyond.

This special session focuses on the latest innovations in antenna technologies and sustainable systems designed to enhance the performance, functionality, and scalability of modern RFID applications. Emerging trends such as multi-frequency operation, compact and flexible antenna designs, energy harvesting, and sensor-integrated RFID tags are explored.

This session aims to bring together leading researchers, practitioners, and industry experts to showcase cutting-edge solutions and discuss and address challenges and opportunities in smart antenna development, miniaturization, material optimization, system-level integration, sustainable RFID system design, and their transformative impact on IoT-driven applications. By addressing critical needs for efficiency, scalability, and environmental stewardship, the session will provide a forward-looking perspective on the future of RFID technology in shaping a connected and sustainable world. Attendees will gain valuable insights into the intersection of innovative antenna technology and modern RFID systems, driving the evolution of wireless identification and sensing in diverse fields.

Special Session on Gameful Technology

Organizers:

Johanna Virkki,
Tampere University, Finland

Asif Shaikh,
Tampere University, Finland

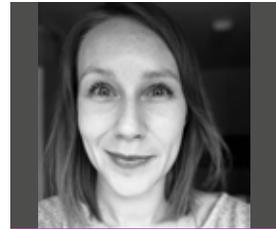
Tiina Vuohijoki,
Tampere University, Finland



Johanna Virkki



Asif Shaikh



Tiina Vuohijoki

The evolution of technology is constantly opening new doors for games. Consider, e.g., mobile games, location-based games, and games in augmented and virtual realities. At the same time, games take new forms of interaction, e.g., through personalized wearables and context-aware devices and create a combination of physical and digital worlds. Game elements, such as collecting points, getting rewards, and having competition are used in non-game contexts, e.g., for engagement and motivation for certain behaviour. Artificial Intelligence, Internet of Things, Sensors, Big Data, Virtual and Augmented Realities, and Wearables are gamifying our daily lives and engage us in an unforeseen manner. Some example areas taking advantage of gamification are education, wellness and rehabilitation, employee training, and consumer engagement. New, unusual, and daring hardware innovations as well as their multidisciplinary development journey descriptions are valued, and this special session encourages authors to submit papers from design and proof-of-concept prototyping to end user testing of gameful technological hardware.

Special Session on Electromagnetic Innovation through Additive and Advanced Manufacturing Technologies

Supported by IEEE Council on RFID and IEEE Technical Committee on Additively Manufactured Electronic Systems (TC-AMES)

Organizers:

Francesco P. Chietera
Polytechnic of Bari, Italy

Niels Benson
University of Duisburg-Essen, Germany

Sara Amendola
Radio6ense s.r.l., Italy



Francesco P. Chietera



Niels Benson



Sara Amendola

This special session focuses on the practical implementation of Additive Manufacturing (AM) technologies, including Fused Filament Fabrication (FFF), Digital Light Processing/Stereolithography (DLP/SLA), Laser Powder Bed Fusion (LPBF), and Material Jetting (MJ), as well as advanced manufacturing techniques such as Laser-Induced Graphene (LIG), Laser Direct Structuring (LDS), Roll-to-Roll (R2R) Manufacturing, and Hybrid Manufacturing. By enabling new levels of integration, scalability, and functionality, these approaches drive interdisciplinary collaboration and foster innovation in electromagnetic and electronic devices. Applications span a wide range of domains, including satellite communications (Satcom), phased array antennas, RFID systems, metasurfaces, biomedical devices, and wearable electronics. Participants will discuss the latest advancements, challenges, and opportunities, as well as explore novel materials, processes, and interdisciplinary applications driving this exciting field.

Special Session on Exploring Hardware Aspects of Low Power Wireless Communication for IoT Applications Across Asia

Organizers:

Lalit Kumar Baghel

Indian Institute of Technology Ropar, India

Nishant Gupta

LNMIIT Jaipur, India

Vikas Kumar Malav

Indian Institute of Technology Ropar, India



Lalit Kumar Baghel



Nishant Gupta



Vikas Kumar Malav

The rapid growth of IoT applications, particularly in resource-constrained environments across Asia, has led to significant advancements in the hardware design of low-power wireless communication systems. These innovations are crucial for enhancing energy efficiency, extending battery life, and enabling sustainable operation of IoT devices in diverse fields such as smart agriculture, healthcare, and industrial automation.

This Special Session will focus on the hardware aspects of low-power wireless communication technologies for IoT applications in Asia, with particular emphasis on energy minimization strategies, battery life enhancement, and the design of energy-efficient circuits and systems. Key topics will include advances in energy harvesting, power management, antenna design, and the integration of low-power communication protocols.

Special Session on Circuits and Systems for Embedded AI – The Hardware Backbone of IoT

Organizers:

Massimo Merenda

Mediterranea University of Reggio Calabria,
Italy

Arcangelo Bruna

STMicroelectronics, Catania, Italy

Salvatore Tedesco

Tyndall National Institute, University College
Cork, Ireland



The rapid evolution of the Internet of Things (IoT) has propelled the need for localized, efficient, and scalable intelligence at the edge. This Special Session, titled “Circuits and Systems for Embedded AI: The Hardware Backbone of IoT”, aims to explore the design and implementation of innovative hardware solutions that empower edge devices with Artificial Intelligence capabilities.

Embedded AI is at the heart of next-generation applications spanning smart cities, autonomous systems, and industrial automation. To meet the growing computational demands while minimizing power consumption and latency, novel circuit architectures and system-level innovations are essential. This session invites contributions from researchers and industry professionals working on circuits and systems that enable on-device learning, neuromorphic computing, in-memory computing, and other AI-optimized hardware technologies.

International Symposium on Statistics and Machine Learning in Electronics

Organizers:

Malinka Ivanova

Technical University of Sofia, Bulgaria

Galina Bogdanova

Bulgarian Academy of Sciences, Bulgaria

Csaba-Zoltán Kertész

Transilvania University Brasov, Romania



Malinka Ivanova



Galina Bogdanova



Csaba-Zoltán Kertész

The aim of the 3th International Symposium on Statistics and Machine Learning in Electronics is to bring together young and experienced researchers, students and educators with interests in how statistics, machine learning and fuzzy logic could facilitate analysis, design, testing, diagnosis, measurement and manufacturing of electronic circuits, modules and devices. Final scientific results will be presented and discussed, revealing new models, methods, algorithms, techniques, and methodologies. The conference is base for forming an international scientific network, spreading new and innovative ideas and the best practices.

It is organized as an ongoing initiative of the project “Exploration Applications of Statistics and Machine Learning in Electronics”, funded by Bulgarian National Scientific Fund.

SPECIAL SESSIONS

Special Session on Energy Modeling of Buildings and HVAC Systems for Energy and Comfort Performance Assessment and Near Real-Time Control

Organizers:

Roberto Garay-Martinez
University of Deusto, Spain

José L. Hernández
CARTIF technology centre, Spain

Beñat Arregi
TECNALIA, Spain



Roberto Garay-Martinez



José L. Hernández



Beñat Arregi

Buildings are made for their occupants. Keeping them comfortable currently accounts for an intense use of energy from multiple vectors (gas, diesel, electricity...) with its negative climate, sustainability and economic impacts.

More efficient energy generation systems or renewable sources are often not affordable due to their high associated costs. Solutions based on the optimization of operation and control are cheaper and have faster returns of investment. The main challenges for their implementation are the availability of data and the need for developing accurate and cost-effective prediction models that can be based on physical simulation, data-driven or hybrid approaches.

Beyond control applications, data-driven modelling also enables more accurate performance diagnostics than desktop assessments and can provide more realistic forecasts of the impact of energy renovation measures, with potential integration on measurement & verification schemes.

This session will focus on how to perform all this with the tools available to Energy Engineering professionals in the 21st century.

Special Session on Life Cycle Assessment, Digital Solutions, and Sustainable Practices in Building Design and Construction



Paris Fokaides

Organizers:

Paris Fokaides

Frederick University, Cyprus

Effrosyni Giama

Aristotle University of Thessaloniki, Greece



Effrosyni Giama

This special session focuses on the integration of Life Cycle Assessment (LCA), advanced digital solutions, and sustainable practices within building design and construction. The session aims to address pressing challenges in reducing the environmental footprint of the built environment while exploring innovative methodologies and digital tools that drive sustainability in the construction sector. Key topics include cutting-edge LCA approaches, the role of BIM and AI in sustainable design, real-world case studies, and regulatory frameworks that promote eco-friendly building practices. This session seeks to foster collaboration among stakeholders to catalyze transformative advancements in sustainable construction.

Special Session on Humanized Computing: Citizen Science, Co-creation, and Emerging Technologies for Human-Centric Decisions



Diego Casado Mansilla

Organizer:

Diego Casado Mansilla

University of Deusto, Spain

Diego López de Ipiña

University of Deusto, Spain



Diego López de Ipiña

Human intelligence, IoT, Digital Twins and AI each have their own strengths and weaknesses.

Machines are effective and efficient in the discovery of implicit knowledge or hidden patterns from large-scale data. In contrast, humans are good at conducting cognitive analysis such as reasoning, inference, and making instinctive judgments by taking into consideration dynamic and multiple factors. When people are organized into groups to conduct research activities, this is called Citizen Science, which pursues Collective Intelligence.

Citizen science needs more and more technological (accessible to lay people) artifacts to be effective for scientific endeavours. In this Special Session, we will gather evidence from existing research regarding the intersection of Citizen Science, Artificial Intelligence, Digital Twins, authoritative (Open Data, spatial data from Copernicus and IoT through low-cost sensors) and crowdsourced data to create communal smart environments where synergy and symbiosis among the agents are enabled. The bottom line is to give place to human understandable information evidence that drive better decisions for humans and the planet.

Special Session on Smart Distributed Electrical Network: Opportunities and Challenges for Integration of Renewable Energy Systems



Mohan Lal Kolhe

Organizers:

Mohan Lal Kolhe

University of Agder, Norway

Nils Jakob Johannesen

University of South-Eastern Norway, Norway



Nils Jakob Johannesen

A future 'Smart Distributed Electrical Energy Network' will serve as a dynamic network for multi-directional energy flows, linking widely distributed small capacity intermittent renewable energy systems at consumer level (distribution network) and centralized higher-capacity power generators, facilitating active participation of customer choice for demand side management, energy production / storage, and providing real-time information on the performance and optimal operation of the smart electrical energy network.

Special Session on Decarbonizing Buildings and Enhancing Resilience: Strategies and Innovations for a Future Sustainable Built Environment

Organizers:

chair

Fabrizio Ascione

University of Naples Federico II, Italy



Fabrizio Ascione

co-chairs:

Agis Papadopoulos

Aristotle University of Thessaloniki,
Greece

Sandro Nižetić

University of Split, Croatia

Muslum Arici

Kocaeli University, Turkey

Paris Fokaides

Frederick University, Cyprus

Marcos Eduardo Gonzalez Trevizo

Autonomous University of Baja
California, Mexico

Pawel Oclon

Cracow University of Technology,
Poland



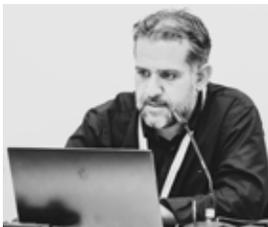
Agis Papadopoulos



Sandro Nižetić



Muslum Arici



Paris Fokaides



Marcos Eduardo Gonzalez Trevizo



Pawel Oclon

The challenge of decarbonizing buildings is increasingly urgent, as outlined by the timeline established in the EU Energy Performance of Building Directive 1275/2024 (EPBD IV), in the context of worrying local and global climate crises. Authoritative monitoring (e.g., WMO, Copernicus, Nasa) of climatic trends and environmental phenomena consistently reveals alarming patterns: each month of recent years has been the hottest compared to the same month in preceding years. Extreme weather events, along with the resulting loss of lives, ecosystems, heritage and infrastructure, are becoming more frequent and severe.

Despite over two decades since the first European Directive on building energy efficiency, the construction sector continues to account for approximately 40% of total energy demand—a share largely unchanged since 2002, when the first EPBD was introduced. This persistent energy consumption significantly impacts the energy balance of European countries. The built environment, with its high energy intensity, is a contributing factor to global warming. Although slow and steady improvements in energy performance have been achieved, these benefits are offset by increasing comfort demands, which lead to the proliferation of energy uses, equipment, and devices, and effectively diminish the benefits of energy efficiency measures. The symposium provides a platform to explore innovative research across a wide range of approaches—numerical, analytical, and experimental—on strategies to improve energy efficiency and reduce energy demands in buildings.

Special Session on Artificial Intelligence of Things and Edge Intelligence

Organizers:

Ivana Podnar Žarko

University of Zagreb, Croatia

Gordan Ježić

University of Zagreb, Croatia

Mario Kušek

University of Zagreb, Croatia



The true potential of the Internet of Things (IoT) lies in its convergence with artificial intelligence (AI), giving rise to the concept of Artificial Intelligence of Things (AIoT), which brings intelligence into IoT solutions. AIoT environments can learn, reason and make autonomous decisions based on the data continuously generated by many IoT devices, and can operate devices autonomously at the edge of the network. AIoT is closely related to the concept of Edge Intelligence which refers to the use of AI within the edge-to-cloud computing continuum. Edge devices are resource-constrained, but typically closer to IoT devices than to the cloud, which reduces response time, network traffic and load on cloud servers, and has a positive impact on user privacy. AIoT and edge intelligence are bringing AI models into our physical environment and breaking down the boundaries between the physical and digital worlds, opening up new opportunities for device intelligence and autonomy in the physical environment.

This special session explores the potential of AIoT and edge intelligence from both research-oriented and industry-led perspectives. The goal is to identify emerging research areas, present solutions to existing challenges and foster collaboration and the exchange of ideas between researchers and stakeholders.

Special Session on Cybersecurity in Healthcare and Medicine (CyHeMe)

Organizers:

Hrvoje Belani

Ministry of Health, Croatia

Ana Madevska-Bogdanova

Ss. Cyril and Methodius University,
North Macedonia

Krešimir Šolić

Josip Juraj Strossmayer University of
Osijek, Croatia

Toni Perković

University of Split, Croatia

Kristina Fišter

University of Zagreb, Croatia

Tatjana Lončar-Turukalo

University of Novi Sad, Serbia



Hrvoje Belani



Krešimir Šolić



Kristina Fišter



Ana Madevska-Bogdanova



Toni Perković



Tatjana Lončar-Turukalo

The Third International Special Session on Cybersecurity in Healthcare and Medicine (CyHeMe) fosters discussion related to information security and cybersecurity, resulting from the need to build secure, reliable and robust systems and services that not only support healthcare and medicine, but also foster well-being, encourage patients and the population in general to live according to healthy lifestyle recommendations, and address the specific safety needs of an aging population. This multidisciplinary special session will bring together practitioners and researchers from relevant disciplines. Among other objectives, CyHeMe aims to: i) develop approaches that support multiple perspectives of information security and cybersecurity in healthcare and medicine; ii) develop or refine methods for achieving and raising cybersecurity of systems and services that promote well-being or health; and iii) identify open research and industry challenges, as well as validation objectives for proposed solutions. This is the third CyHeMe special session, and it will take place on-site.

TUTORIALS

Human Exposure to Nonionizing Radiation



Dragan Poljak

Organizers:
Dragan Poljak,
University of Split, Croatia

Mario Cvetković,
University of Split, Croatia



Mario Cvetković

This Tutorial is based on the book, D. Poljak, M.Cvetkovic, Human Interaction with Electromagnetic Fields; Computational Models in Dosimetry, Elsevier 2019, on some recent journal/conference papers and recent presenters; activities in IEEE ICES SC6 Working Groups and IRPA NIR task group.

Tutorial deals with various aspects of human exposure to electromagnetic fields (EMF) covering not only the undesired exposure from artificial sources, but also the biomedical applications of electromagnetic fields. Thus, the Tutorial addresses some basic environmental aspects of electromagnetic fields, coupling mechanisms between human body and electromagnetic field, well-established biological effects of electromagnetic fields from static to high-frequency range, international safety guidelines related to limiting exposures to those fields, including relevant exposure limits, electromagnetic-thermal dosimetry models and the related analytical/numerical solution methods of governing equations. Finally, some recent findings pertaining to activities undertaken within the framework of IEEE ICES working groups, which Tutorial presenters participated (WG2, WG3, WG5 and WG7) and IRPA TG NIR will be reported.

First, theoretical/experimental methods of incident field dosimetry for the assessment of external fields due to low frequency (LF), intermediate frequency (IF) and high frequency (HF) sources are presented including a number of typical examples that cover exposures to power lines, transformer substations, PLC systems, RFID antennas, Wireless Power Transfer (WPT) systems and radio base stations pertaining to 2G/3G/4G and 5G mobile communication systems.

Then, the tutorial outlines some efficient electromagnetic-thermal dosimetry methods

for the assessment of human exposure to low frequency (LF), high frequency (HF) and transient electromagnetic radiation featuring the use of integral/differential equation formulations and related numerical solution techniques (primarily based on the use of Boundary Element Method – BEM, Finite Element method – FEM hybrid BEM/FEM and Moment Method (MoM) approaches) for the evaluation of induced current densities, internal fields, specific absorption rate (SAR), incident power density (IPD), absorbed power density (APD), transmitted power density (TPD) and specific absorption (SA). Also, for HF exposures the related temperature elevation in tissues is of interest. In particular, for GHz frequency range, as far as 5G systems are of interest, a surface temperature increase on the air-body interface is analyzed. Illustrative computational examples pertain to typical realistic exposure scenarios, such as; pregnant woman/fetus exposed to low frequency (LF) fields, the human eye, the brain, the eye and the entire human head exposed to HF radiation.

In particular, for exposure within GHz frequency range, several tissue models, from rather simple to more realistic, will be addressed.

The obtained numerical results for induced current densities, internal fields, SAR, IPD, APD TPD and SA are compared against exposure limits proposed by recently issued ICNIRP 2020 (International Commission on Non Ionizing Radiation Protection). This is followed by some examples of biomedical applications of electromagnetic fields, including the transcranial magnetic stimulation (TMS), transcranial electrical stimulation (TES), but also some electrotherapy and magnetotherapy techniques. Also, some illustrative computational examples pertaining to thermal modeling of certain ophthalmological procedures will be given.

In the last part of the Tutorial the stochastic modeling of electromagnetic fields is addressed. Namely, the input parameters of models used in bioelectromagnetics suffer from uncertainties in input data set. The values of body tissue parameters such as permittivity and the electrical conductivity vary significantly, depending not only on the age and gender, but also between healthy and ill individuals. Moreover, they are obtained under different measurements on ex vivo animal and human tissues, and exhibit relatively appreciable variations from their average values. When used in computational models, these average values sometimes may result in a rough approximation of realistic scenarios. The models used in bioelectromagnetics are computationally rather demanding as they represent rather complex physical phenomena. Consequently, uncertainty quantification (UQ) based on traditional Monte Carlo method appears to be computationally rather expensive. Therefore, alternative methods such as generalized polynomial chaos and stochastic collocation have become of interest to many researchers in this research area.

In this tutorial, an outline of the application of stochastic collocation (SC) together with some illustrative examples are given. Finally, a sensitivity analysis (SA) techniques on the impact of individual input parameters will be presented.

About organizers

Dragan Poljak received his PhD in el. Eng. in 1996 from the Univ. of Split, Croatia. He is the Full Prof. at Dept. of Electron. and Computing, Univ. of Split. His research interests include computational electromagnetics (electromagnetic compatibility, bioelectromagnetics, ground penetrating radar and plasma physics). To date Prof. Poljak has published more than 160 journ. and 250 conf. papers, and authored some books, e.g. two by Wiley, New Jersey and one by Elsevier, St Louis. He is a Senior member of IEEE, a member of Editorial Board of Eng. Anal. with Boundary Elements, Math. Problems in Eng. And IET Sci. Measur. & Techn. He was awarded by several prizes for his research achievements, such as National Prize for Science (2004), Croatian sect. of IEEE annual Award (2016), Technical Achievement Award of the IEEE EMC Society (2019), George Green Medal from University of Mississippi (2021), IEEE Standards Associations – Certificate of Appreciation, 2022 and National Prize for Science (2023).

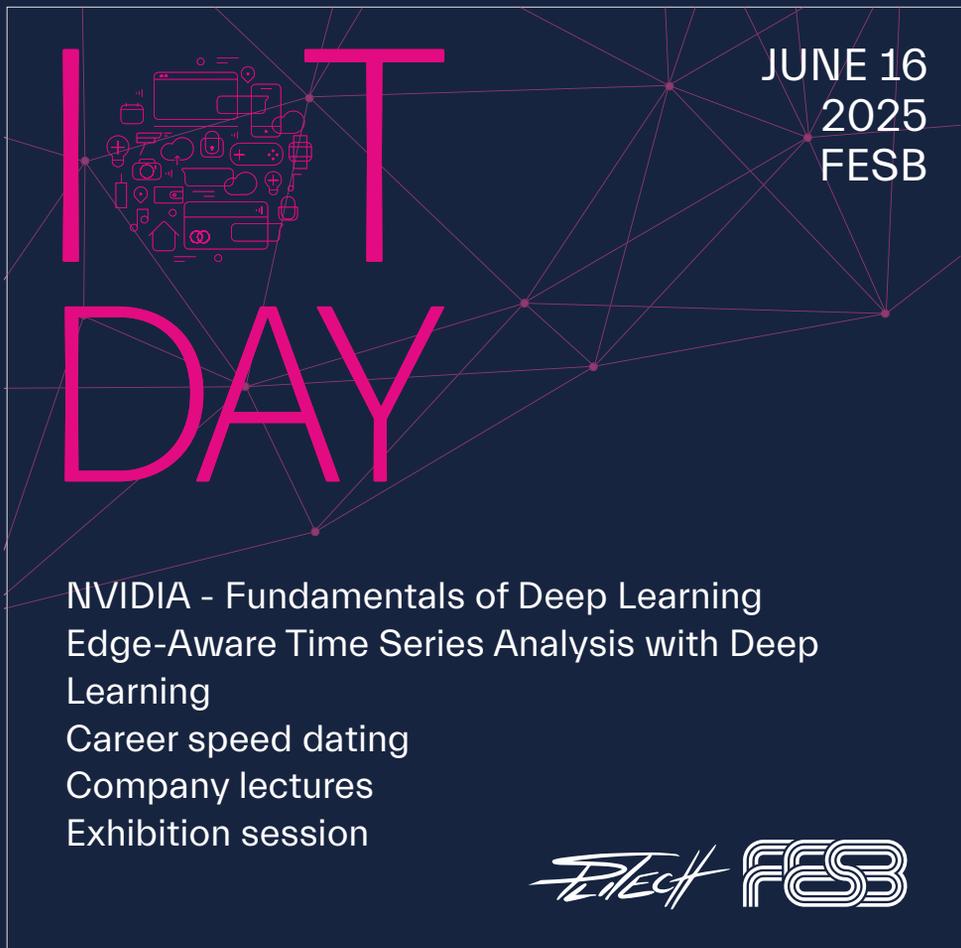
From May 2013 to June 2021 Prof. Poljak was a member of the board of the Croatian Science Foundation. He was involved in ITER physics EUROfusion collaboration and he is currently involved in IFMIF-DONES EUROfusion collaboration and in Croatian center for excellence in research for tech. sciences. He is active in few Working Groups of IEEE/Internat. Committee on Electromagnetic Safety (ICES) Tech. Comm. 95 SC6 EMF Dosimetry Modeling, (co-chair of WG2 and WG7) and Task Group of Nonionizing Radiation of International Radiation Protection Association (IRPA)..

Mario Cvetković received his BSc in electrical engineering from the University of Split, Croatia in 2005. In 2009 he obtained MPhil degree from the Wessex Institute of Technology, University of Wales, UK. In December 2013 he received PhD from University of Split, Croatia. He is associate professor at the Faculty of electrical engineering, mechanical engineering and naval architecture (FESB), University of Split where he teaches fundamentals of electrical engineering course. He held a series of tutorials and seminars related to advanced topics in bioelectromagnetics and various aspects of interaction of humans with electromagnetic fields at the: Technical University of Ilmenau, Germany (2010), Malardalen University, Vasteras, Sweden (2014, 2018), Nagoya Institute of Technology, Nagoya, Japan (2017), University of Maribor, Slovenia (2018, 2019), several Splitech conferences (2016, 2017, 2018, 2019), and SoftCOM conferences (2019, 2021). He is a recipient of the “Best Student Paper Award”, awarded at the 16th edition of the international conference SoftCOM 2008. At the Scientific Novices Seminar held in 2012, he was awarded with the recognition for his previous scientific achievements. To date he has published more than 70 journal and conference papers and several book chapters. In 2019 he coauthored with D. Poljak the book entitled “Human Interaction with Electromagnetic Fields - Computational Models in Dosimetry” published by Elsevier. He is a member of the IEEE ICES TC 95 SC6.

IoT Day

IoT Day

The first significant event of SpliTech 2025 conference will be a whole IoT Day on July 16th. This special date started as an IoT workshop within the SpliTech conference. The huge growth in the Internet of Things and Smart City applications and hardware has inevitably led to the growth of companies that support its development. IoT Day is a full-day event with free lessons, tutorials and exhibition space divided into three parts: practical workshops, lectures by diverse companies and Career Speed Dating.

The graphic features the text 'IoT DAY' in large, bold, pink letters. The 'I' and 'T' are solid pink, while the 'O' is a complex network of pink lines and nodes. The 'D' and 'A' are solid pink, and the 'Y' is solid pink. In the top right corner, the text 'JUNE 16 2025 FESB' is displayed in white. At the bottom, a list of activities is shown in white, followed by the SpliTech and FESB logos in white.

JUNE 16
2025
FESB

NVIDIA - Fundamentals of Deep Learning
Edge-Aware Time Series Analysis with Deep Learning
Career speed dating
Company lectures
Exhibition session

SpliTech FESB

Workshop #1

Time (16.6. from 8:30 - 13:00, FESB, B525)

NVIDIA - Fundamentals of Deep Learning

Workshop leaders: Dr. Ilija Kamenko, The Institute for Artificial Intelligence Research and Development of Serbia, 20 spots

Deep learning is a powerful AI approach that uses multi-layered artificial neural networks to deliver state-of-the-art accuracy in tasks such as object detection, speech recognition, and language translation. Using deep learning, computers can learn and recognize patterns from data that are considered too complex or subtle for expert-written software.

In this workshop, you'll learn how deep learning works through hands-on exercises in computer vision and natural language processing. You'll train deep learning models from scratch, learning tools and tricks to achieve highly accurate results. You'll also learn to leverage freely available, state-of-the-art pre-trained models to save time and get your deep learning application up and running quickly.

Upon successful completion of the assessment, participants will receive an NVIDIA DLI certificate to recognize their subject matter competency and support professional career growth.

IT DAY

JUNE 16
2025
FESB

NVIDIA - Fundamentals of Deep Learning



Workshop #2

Time (16.6. from 14:00 - 16:00, FESB, B525)

Edge-Aware Time Series Analysis with Deep Learning

Workshop leaders: Nikola Marković, Mladen Milić, Dr. Milovan Medojević,
The Institute for Artificial Intelligence Research and Development of Serbia
20 spots

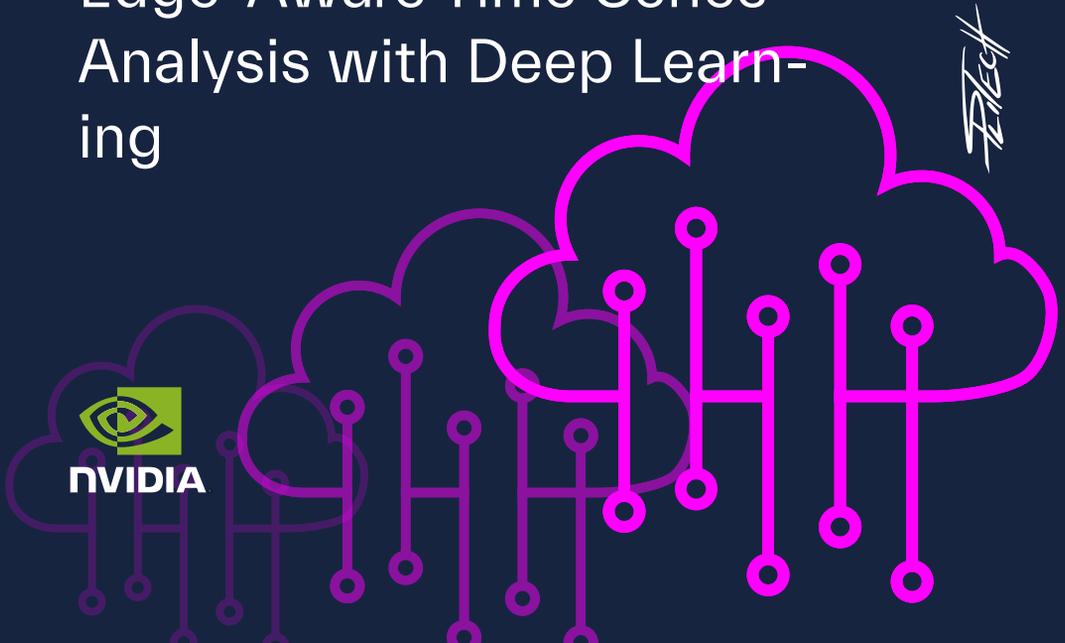
This workshop is concerned with the analysis of deep learning (DL) models for time series processing, which are also suitable for implementation on resource constrained devices. The popular human activity recognition (HAR) dataset will be used. It contains recordings from people while performing six different daily activities. Each recording is a collection of time-series made by a wearable device with accelerometer and gyroscope sensors. The entire workshop will be held in Google Colab using Python/PyTorch.

I T DAY

JUNE 16
2025
FESB

Edge-Aware Time Series Analysis with Deep Learning

Prof. Dr. M. Medojević



Time (16.6. from 08:30 - 16:00, FESB, Faculty Hall)

Career Speed Dating

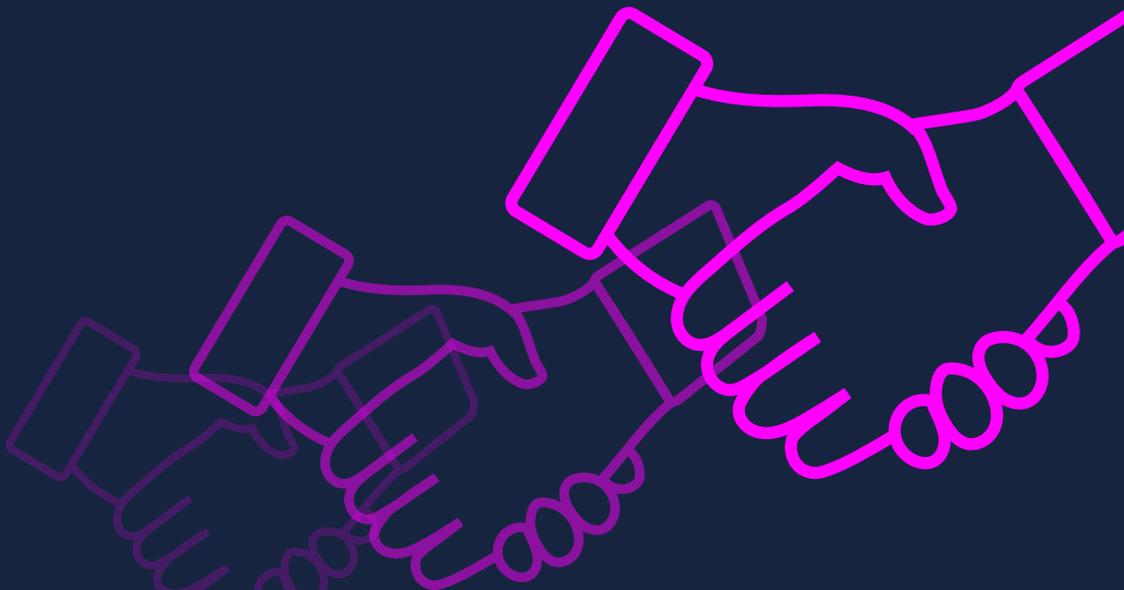
Speed dating between students and employers Career speed dating is an event that gives 7 minutes per each interested participant to discuss the potential of future collaboration with companies that will be present during IoT day event. Interested participants will have an opportunity to meet with companies: AbysAlto B, Codeeasy, Glamos, HT, InstitutSrbija u boji, Institut Srbija, Native, NVIDIA B, NVIDIA u boji, Parklio B, Sceduly, SensorID, Traveling.

Upon successful completion of the assessment, participants will receive an NVIDIA DLI certificate to recognize their subject matter competency and support professional career growth.

IoT DAY

JUNE 16
2025
FESB

Career speed date



Time (16.6, from 11:00-13:00, FESB, A102)

Company Presentations

During IoT day companies will have the opportunity to present their recent achievements and present their current products/services with the focus in IoT. Attendees will have the opportunity to discuss with the company representatives and see their products at the exhibition area, also by creating new business opportunities!

IoT DAY

JUNE 16
2025
FESB

Company Presentations



GLAMOS





AIoTwin

Twining action for spreading excellence in Artificial Intelligence of Things

3rd AloTwin Summer School – OPENING



The Horizon Europe Twinning project AloTwin is organizing its third and final summer school from 16 to 18 June 2025 in the historic city of Split, Croatia, coinciding with the 10th edition of the SpliTech conference. The program of the summer school covers topics relevant to the Internet of Things (IoT), Artificial Intelligence (AI) and Edge Intelligence.

AloTwin is a twinning coordination action for spreading excellence in the field of Artificial Intelligence of Things, bringing together researchers from three European universities (University of Zagreb, Technische Universität Wien and Technische Universität Berlin) and one research institute (RISE). The project has received funding from the European Union's Horizon Europe program "Widening participation and spreading excellence" under grant agreement No 101079214.

Biography:

Ivana Podnar Žarko is a Full Professor at the Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia, since 2017, where she leads the Internet of Things Laboratory. Her research interests are in the domain of distributed systems, especially decentralized solutions in the field of the Internet of Things (IoT), artificial intelligence and interoperability for IoT, mobile crowd sensing solutions and distributed ledger technology. She is the coordinator of the AloTwin project.

Orchestrating Hierarchical Federated Learning Pipelines with AloTwin MiddlewareAbstract:

Ivan Čilić

PhD candidate, Faculty of Electrical Engineering and Computing, University of Zagreb

Katarina Vuknić

PhD candidate, Faculty of Electrical Engineering and Computing, University of Zagreb

Ana Petra Jukić

PhD candidate, Faculty of Electrical Engineering and Computing, University of Zagreb



Ivan Čilić



Ana Petra Jukić



Katarina Vuknić

This hands-on session introduces participants to the practical deployment of Hierarchical Federated Learning (HFL) across the computing continuum. The session is divided into two parts. In the first part, participants will use the Flower framework to set up and execute standard Federated Learning (FL) tasks, gaining insights into FL without middleware orchestration. The second part focuses on the use of AloTwin orchestration middleware, demonstrating how it enables scalable, distributed HFL workflows across heterogeneous edge, fog, and cloud environments. Participants will be guided through deploying their own custom FL tasks on a real distributed cluster, exploring the middleware's capabilities for orchestration, resource management, and hierarchical coordination. This session is ideal for researchers and practitioners interested in edge-to-cloud AI pipelines and FL at scale.

Biographies:

Ivan Čilić is a Leading Researcher at the Department of Telecommunications, Faculty of Electrical Engineering and Computing, University of Zagreb. He received the MS degree in information and communication technology at the Faculty of Electrical Engineering and Computing, University of Zagreb, where he is currently pursuing his Ph.D. degree in computer science. During 2023, as part of the AloTwin project, he participated in a study visit at the Distributed Systems Group at TU Wien, Vienna, Austria. His professional interests include Internet of Things (IoT), edge computing and container orchestration. The current focus of his research is on service orchestration and data-driven routing in the edge computing environment.

Ana Petra Jukić completed her master's degree in computer science from the Faculty of Electrical Engineering and Computing (FER) at the University of Zagreb. She is a PhD candidate and a teaching assistant at FER in the Department of Telecommunications. Her research focuses on federated learning for time series data, communication efficiency and deployment on edge devices.

Katarina Vuknić graduated in Computing from the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split. She is currently a PhD candidate and researcher at the University of Zagreb Faculty of Electrical Engineering and Computing in Zagreb. Her research focuses on the application of machine learning in distributed systems within the Internet of Things environment.

Building a Semantic Swarm of Edge Intelligence



Anh Le-Tuan
University of Berlin, Germany

This hands-on tutorial introduces participants to the Smartedge Toolchain, developed as part of the EU-funded Smartedge project. The toolchain enables the development of applications based on the collaboration of distributed Smartedge nodes that form a dynamic, swarm-like network. The system leverages semantic technologies to describe the capabilities and properties of Smartedge nodes, enabling automatic discovery of nodes suitable for executing specific tasks. Applications are modeled using the Recipe Model, which defines the desired workflow and required node functionalities.

During the tutorial, attendees will gain practical experience using the toolchain, starting with describing smart node capabilities through Web of Things (WoT) Thing Descriptions to achieve semantic interoperability and dynamic discovery. They will then model applications using the Recipe Model and deploy them using SmarteRuntime, managing distributed execution across the edge network. The tutorial highlights real-time device collaboration and is ideal for those interested in Edge AI, IoT, and semantic technologies.

Biography:

Anh Le-Tuan is a postdoctoral researcher at the PICom Lab, Open Distributed Systems group, Technical University of Berlin. His research focuses on semantic technologies, knowledge graphs, the Internet of Things (IoT), and edge intelligence, aiming to enhance interoperability and intelligence in decentralized systems.

He earned his M.Sc. and Ph.D. from the Insight Centre for Data Analytics at the National University of Ireland, Galway, where his research focused on processing linked data on mobile and edge devices. His academic journey began with a Bachelor's and Engineering degree from Volgograd State Technical University in Russia.



AIoTwin
Twinning action for spreading excellence in Artificial Intelligence of Things

TUTORIALS

Tutorial on Learning Under Distribution Shifts



Myeongho Jeon

Myeongho Jeon

École Polytechnique Fédérale de Lausanne,
Switzerland

AI systems have recently achieved state-of-the-art performance and are now widely used across many aspects of our daily lives. However, these models often struggle when encountering data that differs significantly from what they were trained on—a phenomenon known as distribution shift. For example, a self-driving car trained in urban environments may perform poorly when deployed in rural settings. In this talk, I will cover (1) how AI systems are trained and make predictions, (2) different types of distribution shifts and the challenges they pose, and (3) recent approaches developed to address these issues.

Biography:

Myeongho Jeon is a postdoctoral researcher in Computer Science at École Polytechnique Fédérale de Lausanne (EPFL) working in the lab of Prof. Maria Brbić. His main research interests are in developing AI systems capable of solving complex, superhuman-level problems, and improving their generalization to handle distribution shifts across diverse environments. He completed his PhD in Computational Science and Technology from Seoul National University in 2024, under the supervision of Myungjoo Kang and received the University award for the best thesis.

Workload Balancing for Distributed Multi-Object Tracking on Multi-Camera



Ali Ganbarov
Technical University Berlin, Germany

This presentation introduces a distributed architecture for real-time multi-object tracking across multiple camera streams, optimized for deployment on resource-constrained Jetson devices. We present a fully asynchronous, multi-threaded pipeline that balances computational workloads across capture, preprocessing, TensorRT-based YOLOv8 inference, feature embedding extraction, and DeepSORT tracking. Emphasis is placed on low-level system optimization, including parallelism, memory management, and pipeline parallelism to maximize performance on heterogeneous edge hardware.

To support scalable cross-camera Re-Identification (Re-ID), we decouple identity resolution from edge inference by transmitting compact appearance embeddings to a central Kafka broker. These embeddings are indexed using a high-performance vector database (e.g., FAISS), enabling efficient global identity assignment while minimizing network bandwidth. We conclude with performance evaluations, design trade-offs, and insights into building scalable edge-to-cloud tracking systems under strict hardware constraints.

Biography:

Ali Ganbarov is a scientific employee at TU Berlin, specializing in real-time, distributed multi-camera object tracking on edge devices. With a background in data engineering at Zalando and HPC research at HSU Hamburg, he has led projects optimizing deep learning pipelines using CUDA, PyTorch, and parallel programming. He holds an M.Sc. in Informatics from TU Munich and has extensive experience in building scalable, high-performance systems across industry and academia.

Time Series Prediction



Anna Lackinger

Vienna University of Technology, Austria

This tutorial provides a step-by-step guide to time series forecasting. The first part is aimed at beginners, demystifies the core components of time series data, such as trend, seasonality, and noise, and guides through the essential steps of preparing data for predictive modeling.

The second part analyses the most common forecasting techniques, from classical statistical methods to modern machine learning to deep learning approaches. Each method is illustrated with examples to help understand how and when they can be used effectively.

Biography:

Anna Lackinger is a project assistant and a PhD student in the Distributed Systems Group at the Technical University of Vienna in Austria. Before completing her master's degree in 2023, she contributed to the AloTwin project. Besides working for AloTwin, she is also working on the Horizon Europe project Intend since January 2024. Her current research interests include time-series prediction, federated learning, and reinforcement learning.

Model Compression and Pruning Techniques for AI on IoT Devices



Fatemeh Rahimian

RISE Research Institutes of Sweden, Sweden

This tutorial introduces participants to the principles and practices of efficient deep learning, with a focus on core model compression techniques such as pruning, quantization, and the design of efficient neural architectures. Through a hands-on walkthrough, participants will learn how to apply fine-grained pruning and perform model quantization. The tutorial is designed to provide a solid introduction and practical starting point for developing efficient, low-footprint AI systems suitable for real-world use.

Biography:

Fatemeh Rahimian is a senior researcher at RISE Research Institutes of Sweden focusing on advanced data analytics, resource-efficient machine learning, graph neural networks, decentralized learning, and model compression. Previously, she was a machine learning scientist at the University of Oxford (2017-2018) and a senior researcher at the Swedish Institute of Computer Science (2014-2017). She received her PhD in Information and Communication Technology from KTH in 2014. She was named one of the Top 100 Nordic AI Leaders in 2023.

Semi-Decentralized Training of Spatio-Temporal Graph Neural Networks for Traffic Prediction



Ivan Kralj
University of Zagreb, Croatia

In smart mobility, vast networks of geographically distributed sensors generate high-frequency spatio-temporal data that must be processed in real time to avoid disruptions. Centralized approaches struggle to scale with growing sensor networks and are prone to reliability issues. To address these challenges, we adapt semi-decentralized training techniques for Spatio-Temporal Graph Neural Networks (ST-GNNs). Sensors are grouped by proximity into cloudlets, each managing a subgraph, exchanging node features, and sharing model updates to ensure consistency, eliminating reliance on a central aggregator. We evaluate centralized, traditional FL, server-free FL, and Gossip Learning setups on METR-LA and PeMS-BAY datasets for short-, mid-, and long-term predictions. Results show that semi-decentralized setups are comparable to centralized methods in performance while improving scalability and reliability, with attention to communication and computational costs often overlooked in existing literature.

Biography:

Ivan Kralj is a researcher at the Department of Telecommunications of UNIZG-FER and a member of the IoTLab since November 2020. He received his MS degree in Information and Communication Technology at FER-UNIZG in 2020. His professional interests include Internet of Things (IoT), distributed systems and Graph Neural Networks (GNNs). The current focus on his research is on the distributed training of GNNs and reducing resource consumption when running GNNs in distributed resource-constrained IoT-environment. He is currently pursuing a PhD in Computing at UNIZG-FER and is working on his dissertation topic entitled “Graph neural networks for spatio-temporal data in distributed resource-constrained IoT environment” under the supervision of Prof. Gordan Ježić.

CONFERENCE LOCATION (JUNE 16, 17 AND 18):



UNIVERSITY OF SPLIT, FESB

CONFERENCE LOCATION (JUNE 19, 20):



HOTEL ELAPHUSA, BOL (ISLAND OF BRAČ)

HOTEL ELAPHUSA, BOL

Conference center of Bluesun hotel Elaphusa is ideal for hosting all types of conference events and cultural manifestations. There are total of 5 conference halls. The largest hall has the capacity of 800 seats, while the other 4 can accommodate 10 to 120 persons.

TRAVELLING TO BOL

Bol can be reached:

- 1) Fast boat directly to Bol
- 2) Ferry from Split to Supetar and then take the bus from Supetar to Bol

*Nearest Airports: Split Airport, Brač Airport

FACILITIES

Accommodation 300 rooms and 6 suites

Sport

Fitness, indoor golf simulator, disco, bowling, pool, table tennis, tennis center (26 clay courts), diving, surfing and sailing course...

Swimming pools

Outdoor and indoor swimming pool with sea water

Thalasso wellness

Area of 3500 m² (12 treatment rooms), saunas, aqua world and relax area, wide selection of classic and exotic treatments based on sea water

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Gases for Life

The company Messer Croatia Plin belongs to the Messer group and has seven locations and several sales warehouses and distribution centers. The most modern production plants and bottling plants are located and work in Zaprešić. Gas centers and filling stations in all parts of Croatia ensure fast and individual gas supply.

Messer Croatia Plin has facilities for air decomposition, stores and transports gas in tanks or bottles, and can also produce gases at the point of application.

As wide as the range of offered gases is, so are the industries that profit from these gases and from the application of the professional knowledge of Messer employees: steel and metal processing industry, chemical, food and pharmaceutical industry, automotive and electronic industry, medicine, research and environmental engineering.

In the field of medicine, Messer Croatia Plin is the leading Croatian manufacturer and distributor of global manufacturers of medical products in the field of clinical care and home care.

Thank you, Messer Croatia Plin, for your invaluable support and dedication to making SpliTech a success.

Zračna luka sveti Jeronim

KAŠTELA • HRVATSKA

We are delighted to announce that Split Airport (Saint Jerome Airport) is once again supporting us as one of our valued sponsors for SpliTech 2025.

The SpliTech International Conference attracts scientific experts, academic researchers, and industry professionals from around the world.

And Saint Jerome Airport plays a crucial role in facilitating their arrival. Sveti Jeronim Airport, founded as Split Airport, is one of nine international airports in Croatia. It is located in the Resnik area west of Kaštel Štafilić, 6 km from Trogir and 25 km from Split. It provides essential connectivity for attendees traveling to our event. Thank you, Saint Jerome Airport, for your invaluable support and dedication to making SpliTech a success.

ABOUT SPLITECH 2025 CONFERENCE

PROCEEDINGS

All participants will receive the Final program and USB Proceedings when registering at the Conference desk

LANGUAGE

The Conference language is English

REGISTRATION

June 16 08:00-18:00

June 17 08:30- 16:00

June 18 08:30- 14:00

June 19 08:00- 17:00

June 20 10:30- 14:00

SECRETARY

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FACULTY OF ELECTRICAL ENGINEERING, MECHANICAL ENGINEERING AND NAVAL ARCHITECTURE (FESB), SPLIT



SpliTech 2025 is organized by the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB), University of Split. The basic activities of the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture involve teaching, research, development, professional work and innovation in the areas of technical sciences, including Electrical Engineering, Electronics, Mechanical Engineering, Naval Architecture, Computer Science, Industrial Engineering and Natural Sciences. With approximately 2500 students and more

than 230 employees, FESB has grown into recognized and highly respectable educational and research institution dealing with the advanced technologies and consequently, contributing to the development of the economy and society. In particular, the robustness of FESB research capabilities has been confirmed through numerous successful competitive and other research and technological projects, number of scientific and professional papers published in peer-review journals, approximately and through the continuous cooperation with internationally recognized research and academic institutions, respectively. One of the biggest and best equipped faculties on the campus, FESB is among the first that was built on the University of Split campus, and is among the biggest, not only in size, but in reputation which has been successfully built for more than 50 years. Today, FESB is gathering eminent experts for both teaching and scientific projects attracting more students every year. 235 employees, 148 teaching personnel, 107 with a doctorate degree, 10 classrooms, 9 amphitheatres, 11 computer equipped classrooms, 95 laboratories, 29477 square meters area. Student life on FESB has always been attracting a great number of students. Graduating from FESB has a particular importance and respect from the business world. A great number of graduated students developed successful carriers and help FESB's reputation. Many individuals were credited for this responsibility, and they were not afraid of walking ahead of their time, and showing what is to be expected in the future.

ABOUT SPLIT

Split can be reached:

-by air: directly from Amsterdam, Frankfurt, London, Lyon, Munich, Oslo, Paris, Vienna and via Zagreb from all world airports. For more information, visit Airport Split-Kaštela.

-by ship: Split harbor is daily connected with Ancona.

PROGRAM

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