

22<sup>nd</sup> IEEE International Conference on  
Distributed Computing in Smart Systems  
and the Internet of Things

# DCOSS-IoT 2026

## PROGRAM



**June 22 – 24, 2026**

**Reykjavik, Iceland**



## Message from Program Chairs and the Steering Committee Chair

The twenty-second Annual International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT) is held this year in Reykjavik, Iceland on June 22 – 24, 2026. In recent years, the use of distributed sensor systems has grown substantially, covering a wide range of application domains. For smart sensor systems to achieve true effectiveness and efficiency, it is crucial to address key research challenges, including the seamless integration of sensing and machine intelligence, robust and efficient networking, interoperability and scalability, dependable autonomy, human interaction, as well as critical issues related to security, privacy, and trust. Since its inception, DCOSS has focused on the aforementioned information processing challenges in distributed sensor systems, encompassing models, algorithms, architectures, deployment tools, and emerging applications. In 2023, DCOSS expanded its scope beyond sensor networks to include smart systems more broadly, as well as the Internet of Things (IoT), adopting its title to “Distributed Computing in Smart Systems and the Internet of Things” (DCOSS-IoT). This evolution has significantly increased community interest, as reflected in the notable rise in submissions in recent years, including a record number for the 2026 edition.

The main event of DCOSS-IoT 2026 includes a high-quality technical program consisting of keynotes, research papers, and a poster session. We received 138 full paper submissions. Each submitted paper was reviewed by at least three experts in the field; many papers received four reviews. After online discussions, we accepted 33 full papers (23,9%); also 6 short papers. In addition, 22 poster papers were accepted from both the main event and an open call. Specifically, the program covers important aspects of distributed computing in smart systems and IoT, such as machine learning and artificial intelligence, novel applications and deployments, scalability and resource allocation, communications and security, drones and autonomous systems, and RF sensing.

We congratulate the authors of the following three best paper candidates:

- Nathan Ng and Walid A. Hanafy (University of Massachusetts Amherst, USA); Prashanthi Kadambi (Indian Institute of Science, India); Balachandra Sunil and Ayush Gupta (University of Massachusetts Amherst, USA); David Irwin (University of Massachusetts, Amherst, USA); Yogesh Simmhan (Indian Institute of Science, India); Prashant Shenoy (University of Massachusetts, Amherst, USA), «*Collaborative Processing for Multi-Tenant Inference on Memory-Constrained Edge TPUs*»
- Mohammad Mahdi, Ahmad Alqattan and Ameer Mohammed (Kuwait University, Kuwait), «*Anonymous Command Authorization for IoT Devices Using Zero-Knowledge Proofs*»
- Guillermo Benito-Calvino, Ahmed Boubrima, Alessandro Renzaglia and Herve Rivano (Inria, INSA Lyon, France); Zhambyl Shaikhanov (University of Maryland, College Park, USA), «*ORION: Olfactory and RF Multimodal Sensing for UAV-Based Localization of Disaster Victims*»

The winner will be announced at the event.

Three keynote talks are delivered by Prof. Ian Akyildiz (Truva Inc., USA), Prof. Tarek Abdelzaher (University of Illinois) and Prof. Symeon Chatzinotas (University of Luxembourg).

The program is further enriched by 12 relevant Workshops, which constitute an important component of the event. By focusing on specific aspects and perspectives of distributed systems and the Internet of Things, they significantly enhance the scientific impact of the venue. We believe that the technical program will offer a stimulating forum for researchers and practitioners to exchange cutting-edge ideas in distributed sensor systems.

The conference would not be successful without the hard work of many volunteers. First, we wish to thank the academic leaders of the University of Iceland for hosting DCOSS-IoT 2026; especially, its Rector Prof. Jón Atli Benediktsson; we warmly thank Ingibjörg Ólafsdóttir and Kristinn Andersen of the University of Iceland for (so effectively) taking care of the diverse local aspects of the event. Also, we thank the Publicity Chairs (Aris Leivadreas, Hyunbum Kim, Himank Gupta and Lorenzo Palazzetti) for their efficient work in widely disseminating the call for papers. We warmly thank the Technical Program Committee members (79 TPC Members from 24 countries) for their high-quality reviews. Also, we are grateful to the Chairs of the 12 specialized Workshops, the Poster Chairs (Claudio Savaglio, Federico Corò, Dimitrios Zormpas), the Workshop Chairs (Thomas Lagkas, Francesco Betti Sorbelli, Jennifer Simonjan), the Proceedings Chair (Marios Angelopoulos) for effectively coordinating the Proceedings Volume, and the Web Chairs (Marinos Xynis and Minas Gadalla) for their hard work towards the success of DCOSS-IoT 2026.

Finally, we are grateful to the authors for submitting their fine work to DCOSS-IoT 2025 and all the participants for their attendance.

### Program Co-Chairs

Eirini-Eleni Tsiropoulou

Carla Fabiana Chiasserini

and Stefano Secci

### Steering Committee Chair

Sotiris Nikolettseas

## Message from the Workshop Chairs

<https://dcoss.org/workshops/>

Workshops have historically constituted an essential part of the technical program of the annual International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT). The 2026 edition makes no exception and includes a total of twelve exciting workshops, to be held in conjunction with DCOSS-IoT 2026 in Reykjavik, Iceland, June 22-24, 2026. The workshops focus on a wide spectrum of topics around the umbrella of distributed computing in smart systems and IoT, including wireless sensors and drones, IoT applications and Industry 5.0, smart circular economy, intelligent systems for IoT, urban computing, security and reliability of IoT and supply-chain cybersecurity, distributed collective intelligence, IoT-driven urban sustainability and green technology, hybrid intelligence for the Internet of Everything, long- and short-range wireless IoT technologies, real-life modeling in 5G/6G networks and beyond, and trusted, human-centered IoT and AI systems.

Workshops' programs will include technical paper presentations and, where applicable, invited talks, keynote presentations, panels, and special sessions to encourage active discussion among attendees. Accepted and presented workshop papers will appear as part of the IEEE DCOSS-IoT 2026 conference proceedings and will be published by IEEE Xplore.

We hope DCOSS-IoT attendees will enjoy and appreciate this year's exciting and rich workshop program.

*The Workshops Chairs:*

*Thomas Lagkas, Democritus University of Thrace, Greece*

*Francesco Betti Sorbelli, University of Perugia (UNIPG), Italy*

*Jennifer Simonjan, Technology Innovation Institute - TII, UAE*

### List of Workshops and key organizers:

#### **Wi-DroIT 2026 (8th International Workshop on Wireless Sensors and Drones in Internet of Things)**

<https://widroit2026.github.io/>

Lorenzo Palazzetti - Pennsylvania State University, PA, USA

Dimitrios Zorbas - Nazarbayev University, Kazakhstan

#### **IoT15 2026 (8th International Workshop on IoT Applications and Industry 5.0)**

<http://ioti5-2026.cs.duth.gr/>

Thomas Lagkas - Democritus University of Thrace, Greece

Panagiotis Sarigiannidis - University of Western Macedonia, Greece

John Soldatos - Netcompany-Intrasoft, Luxembourg

#### **SmaCE 2026 (8th IEEE International Workshop on Smart Circular Economy)**

<https://www.sma-ce-workshop.org/>

Marios Angelopoulos - Bournemouth University, UK

Giorgos Demetriou - École des Ponts Business School, France

Vasileios Gerogiannis - University of Thessaly, Greece

Vasilis Katos - Bournemouth University, UK

David Langley - University of Groningen, the Netherlands  
Sotiris Nikolettseas - University of Patras, Greece

**ISIoT 2026 (8th International Workshop on Intelligent Systems for the Internet of Things)**

<https://sites.google.com/view/isiot-2026/home>

Michael Georgiades - Neapolis University Pafos, Cyprus  
Iacovos Ioannou - Philips University of Cyprus and CYENS Research Center, Cyprus  
Andreas Gregoriades - Cyprus University of Technology, Cyprus  
Vasos Vassiliou - University of Cyprus and CYENS Research Center, Cyprus

**UrbCom 2026 (8th International Workshop on Urban Computing)**

<https://sites.google.com/view/urbcom2026/home>

Leandro A. Villas - University of Campinas, Brazil  
Thiago H. Silva - University of Toronto, Canada; Federal University of Technology, Brazil  
Daniel L. Guidoni - Federal University of Ouro Preto, Brazil  
Wellington Lobato - INRIA, France

**SecRIoT-SCC 2026 (7th IEEE International Workshop on Security, Reliability of IoT Systems & Supply Chain Cybersecurity)**

<https://sites.google.com/view/secriot2026>

Athanasios Kakarountas - University of Thessaly, Greece  
Leandros Maglaras - De Montfort University, UK & Edinburgh Napier University, Scotland  
Naghmeah Moradpoor - Edinburgh Napier University, Scotland  
Vasileios Vlachos - University of Thessaly, Greece  
Thomas Edward Welsh - University of Iceland, Iceland

**DISCOLI 2026 (5th International Workshop on Distributed Collective Intelligence)**

<https://discoli-workshop.github.io/2026/>

Roberto Casadei - Alma Mater Studiorum, Università di Bologna, Italy  
Pietro Manzoni - Universitat Politècnica de València, Spain  
Alessandro Sapienza - Institute of Cognitive Sciences and Technologies, ISTC-CNR, Italy  
Claudio Savaglio - Università della Calabria, Italy

**IoT-Green 2026 (2nd International Workshop on IoT-Driven Urban Sustainability and Green Technology)**

<https://sites.google.com/view/iot-green-2026>

Zinon Zinonos - American University of Beirut Mediterraneo  
Haidar Safa - American University of Beirut  
Ala' Khalifeh - German Jordanian University

**HIEMI 2026 (2nd International Workshop on Hybrid Intelligence for Internet of Everything Models and Implementations)**

<https://hiemi-workshop.github.io/2026/>

Francesco Cauteruccio - University of Salerno, Italy  
MengChou Zhou - New Jersey Institute of Technology, USA

**LS-NoT 2026 (4th International Workshop on Long and Short Range Wireless Technologies Applied to IoT for Networks of Tomorrow)**

<https://ls-not-workshop.github.io/ls-not-2026/>

Jana Koteich - INSA Lyon, France

Nina Tamdrari - Inria, France

Damien Sambo - IMT Nord Europe, France

**REFRESH 2026 (6th International Workshop on Real-life Modeling in 5G/6G networks and beyond)**

<https://refresh2026.netmode.ece.ntua.gr/>

Maria Diamanti - National Technical University of Athens, Greece

Anastasios Zafeiropoulos - Institute of Communication and Computer Systems, Greece

**TI-2026 (3rd International Workshop on Next Generation IoT and AI systems for Trusted, Human-Centered Intelligence)**

<https://workshops.unparallel.pt/ti-2026>

Luís Lino Ferreira - INESC TEC/ISEP, Portugal

Ernesto Troiano - GFT, Italy

# Program Overview

Monday (June 22, 2026)		Tuesday (June 23, 2026)		Wednesday (June 24, 2026)	
Room N-132		Room N-132		Room N-132	
8:30-9:00	Registration	Registration	Registration	Registration	Registration
9:00-9:30	Welcome & Introduction	Keynote 2	Keynote 3	Keynote 3	Keynote 3
9:30-10:00	Keynote 1	Prof. Tarek Abdelzaher	Prof. Ian Akyildiz	Prof. Ian Akyildiz	Prof. Ian Akyildiz
10:00-10:30	Prof. Symeon Chatzinotas	Coffee break	Coffee break	Coffee break	Coffee break
10:30-11:00	Coffee break				
11:00-13:00	Session 1: Wireless Networking & LoRaWAN Systems	Session 4: Sensing for Agriculture, Environment & Industry	Session 6: UAV, Satellite & Swarm Intelligence	Session 6: UAV, Satellite & Swarm Intelligence	Session 6: UAV, Satellite & Swarm Intelligence
13:00-13:05	Lunch	Lunch	Lunch	Lunch	Lunch
13:05-14:00					
14:00-15:30	Session 2: Edge AI Platforms & Runtime Systems	Session 5: Multimodal Health, Biometrics & Video Analytics	Session 7: Smart Homes, Privacy & Secure IoT	Session 7: Smart Homes, Privacy & Secure IoT	Session 7: Smart Homes, Privacy & Secure IoT
15:30-16:00					
16:00-16:30					
16:30-16:50	Coffee break				
16:50-17:20					
17:20-17:50	Session 3: Federated & Distributed Learning for IoT	Excursion to the Golden Ring and Banquet Buses depart at 16:00 (firm)	Excursion to the Golden Ring and Banquet Buses depart at 16:00 (firm)	Excursion to the Golden Ring and Banquet Buses depart at 16:00 (firm)	Excursion to the Golden Ring and Banquet Buses depart at 16:00 (firm)
17:50-18:10					
18:10-18:50	Oral Poster/ Demo Session I (N-132)				
18:30-19:10	Oral Poster/ Demo Session II (N-130)				
Post conference	Welcome Reception (19:10-20:10)				Final Remarks & Closing

## Keynote Talks

Prof. Ian Akyildiz

“From Digital Twins to Cognitive Twins:  
Closing the Metacognitive Loop  
in Distributed Sensor Networks”



Prof. Tarek Abdelzaher

“The Bottlenecks in Advancing Foundation Models  
for Internet of Things (IoT) Applications”



Prof. Symeon Chatzinotas

“6G NTN Communication and Edge Computing  
for Satellite IoT”



08.30-09.00	Registration opens
09.00-09.30	<p><b>Welcome and Introduction</b> (<i>Steering Committee, TPC Chairs, General Chairs</i>)</p> <p>(<i>Chair: Francesco Betti Sorbelli</i>)</p>
09.30-10.30	<p><b>Keynote Talk: "6G NTN Communication and Edge Computing for Satellite IoT"</b></p> <p><i>Prof. Symeon Chatzinotas</i></p>
10.30-11.00	Coffee Break
11.00-13.05	<p><b>Session 1: Wireless Networking and LoRaWAN Systems</b></p> <p>(<i>Chair: Marios Angelopoulos</i>)</p> <ul style="list-style-type: none"> <li>• <b>Chord: Multi-Tone Carrier-Assisted Querying for Analog Backscatter Systems</b> <i>Madhushanka Padmal and Dilushi Piumwardane, Thiemo Voigt</i></li> <li>• <b>Configuring Industrial Wireless Mesh Network via Dual-Mind Reasoning</b> <i>Aitian Ma and Dongsheng Luo, Ali Maatouk, Rex Ying, Mo Sha</i></li> <li>• <b>Leveraging LLMs to Close Simulation-to-Reality Gap in Wireless Mesh Network Configuration</b> <i>Jean Tonday Rodriguez, Dipan Sadekeen, Mo Sha, Mohammad Ashiqur Rahman</i></li> <li>• <b>Delta-Based Compression and Multicast Synchronization for Efficient LoRaWAN FUOTA</b> <i>Andrea De Simone, Giovanna Turvani, Mariagrazia Graziano and Fabrizio Riente</i></li> <li>• <b>LEAP: An Adaptive Transmission Strategy for Energy-Efficient Positioning in LoRaWAN Networks</b> <i>Juan Aznar Poveda, Stefan Pedratscher, Abolfazl Younesi, Miriam Leitner, Laura Acosta-García, Thomas Fahringer, Antonio-Javier Garcia-Sanchez, Joan Garcia-Haro</i></li> </ul>
13.05-14.00	Lunch
14.00-16.20	<p><b>Session 2: Edge AI Platforms and Runtime Systems</b></p> <p>(<i>Chair: Fabrizio Riente</i>)</p> <ul style="list-style-type: none"> <li>• <b>Collaborative Processing for Multi-Tenant Inference on Memory-Constrained Edge TPUs</b> <i>Nathan Ng, Walid A. Hanafy, Prashanthi Kadambi, Balachandra Sunil and Ayush Gupta, David Irwin, Yogesh Simmhan, Prashant Shenoy (<i>best paper candidate</i>)</i></li> <li>• <b>Reliable Unreliability in Edge Deployments</b> <i>Animesh Narayan Dangwal, Ria Singh, Shruthi Unnithan, Karen Yuan, Emily Zheng, Chandra Krintz, Rich Wolski</i></li> <li>• <b>Towards High-Level Declarative Infrastructure Description for the IoT-Edge-Cloud Continuum</b> <i>Marlon Etheredge, Juan Aznar Poveda, David Gstir, Stefan Pedratscher and Thomas Fahringer</i></li> <li>• <b>treVM: Tiny Rust Embedded Virtual Machines with WASM on Variable Resource-Constrained Hardware</b> <i>Antoine Lavandier, Bastien Buil, Chrystel Gaber, Emmanuel Baccelli</i></li> <li>• <b>Trust-Aware Routing for Distributed Generative AI Inference at the Edge</b> <i>Chanh Le Tan Nguyen, Erik Elmroth</i></li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Towards a Protocol-Agnostic Universal Middleware for IoT with Edge Intelligence” (short paper)</b> <i>Hasan Mahmood Aminul Islam, Mahamudur Rahman Maharaz, Faisal Ahmed, Mahir Faysal Haque Dipto, Md. Minhajul Haque Shafin, Michael Georgiades</i></li> </ul>
16.20-16.50	<b>Coffee Break</b>
16.50-18.10	<p style="text-align: center;"><b>Session 3: Federated and Distributed Learning for IoT</b> <i>(Chair: Emmanuel Baccelli)</i></p> <ul style="list-style-type: none"> <li>• <b>High-Fidelity Network Management for Federated AI-as-a-Service: Cross-Domain Orchestration (short paper)</b> <i>Merve Saimler, Mohaned Chraiti and Ozgur Ercetin</i></li> <li>• <b>Flexible Distributed Particle Filtering for the Internet of Things via Aggregate Computing</b> <i>Angela Cortecchia, Davide Domini, Giovanni Ciatto, Roberto Casadei, Danilo Pianini, Mirko Viroli</i></li> <li>• <b>Self-Supervised Federated Learning for Zero-Day Intrusion Detection in Heterogeneous Industrial IoTs</b> <i>Shagufta Henna and Kathy Bannigan</i></li> <li>• <b>Improving Zero-Shot ADL Recognition with Large Language Models Through Event-Based Context and Confidence (short paper)</b> <i>Michele Fiori, Gabriele Civitarese, Marco Colussi, Claudio Bettini</i></li> </ul>
18.10-19.10	<p style="text-align: center;"><b>Oral Poster/Demo Presentations I</b> <b>(Edge Intelligence, Learning and Digital-Twin Applications)</b> <i>(Chair: Dimitris Zorbas)</i></p> <p>From Sensors to Insight: Rapid, Edge-to-Core Application Development for Sensor-Driven Applications Komal Thareja, Anirban Mandal, Ewa Deelman</p> <p>Impact of Training Data Contamination on Unsupervised Time Series Anomaly Detection Thomas Strametz, Muesluem Atas, Fatima Jammoul, Olga Saukh, Joachim Schauer</p> <p>EXFEDL: Explainable Clustered Federated Learning for Multivariate Residential Load Forecasting Ivonne Nunez, Eric Samikwa, and Torsten Ingo Braun, Carlos Rovetto</p> <p>Adaptive Placement Policies for Delay-Sensitive Applications in Multi-Access Edge Computing David Schuster and Volker Gruhn</p> <p>Intent Reasoning from User Locale Data Using Tiny Recursive Models Akash Sahoo and Rabi Mahapatra, Swayamprava Satpathy, Amita Sahoo</p> <p>Formation-Guided Hierarchical Reinforcement Learning for UAV Swarm-Assisted MEC Larry Garcia and Junfei Xie</p>

Benchmarking YOLO11, YOLO26, and RT-DETR for Person Detection in UAV Imagery  
Andreea Anghelescu, Loretta Ichim, Dan Popescu

Optimal Placement of Affective Digital Twins with Reusable AI Models at the Edge  
Marica Amadeo, Salvatore Serrano, Giuseppe Ruggeri

Multi-Agent Framework for Decentralized Digital Twins  
Mengbing Zhou and Zhiming Zhao

TITAN: Tiny Inference and Training for Transformer Models on FPGA-Based Edge Nodes  
Isuru Tennakoon, Chamara Sandeepa, Isuru Pinto, José Cano, Shen Wang and Madhusanka Liyanage

Towards Edge-Based Small Language Models for Automated Network Management via Two-Stage Adaptation  
Zine el abidine Kherroubi, Monika Prakash, Tirth Master, Kavin Kumar Thangadorai, Michael Baddeley and Jean-Pierre Giacalone

**Oral Poster/Demo Presentations II**  
**(Sensing, Wireless Protocols and Trustworthy IoT Systems)**  
*(Chair: Lorenzo Palazzetti)*

Edge-Based Multimodal Driver Monitoring System on Raspberry Pi  
Haoxiang Chen, Yan Li, Yifan Chen, Shuyang Zhong and Shuyu Zheng

VarDiag: Lightweight and Precise Fault Localization for IoT Systems  
Saurabh Band, Shadi Attarha and Anna Förster

From Lab to Farm: Characterizing UWB-Based TDOA Localization Reliability for Dairy Cattle Monitoring  
Harshit Sharma, Hao Zhang, Jakub Krzych, Lawrence Jones, Asif Salekin and Sucheta Soundarajan

Beyond RFF - Context Integrity Monitoring via Image-Based RF Analysis  
Ingrid Huso, Tom Udding, Savio Sciancalepore and Gabriele Oligeri

Luxor: A Batteryless Deterministic IoT Sensing Node for Long-Term Indoor Deployment  
Leonor Carvalho, Diogo Gonçalves, Miguel Roque Soares, Waldir Moreira and Vitor Grade Tavares

CollabXR: Real-Time Collaborative Medical XR Training over 5G O-RAN and mmWave Networks  
Vidura Ravihansa, Greg Agriopoulos, Eleni Mangina and Madhusanka Liyanage

Carrier-Assisted Querying of Analog Backscatter Tags  
Dilushi Piumwardane, Thiemo Voigt and Madhushanka Padmal

Auditable Access Control for Physical AI Agents in Multi-Organisation Spaces  
Muthucumar Maheswaran and Akash Lanard

Real-Time Bird Detection with a Modular Acoustic Sensing Platform  
Davis Rakhshan, Lucas Bublitz and Ulf Kulau

Monday, June 22

Discrete Wavelets as Zero-Parameter Front-End for near-Sensor Cardiac-Interval Estimation from Seismocardiography

Kazi Mohammad Abidur Rahman, Lutfi Khary and Ulf Kulau

Point-Wise vs. Cumulative Forecasting of Photovoltaic Energy Production

Luciano Caroprese, Ester Zumpano, Tommaso Ruga, Camilla Lops, Mariano Pierantozzi, Sergio Montelpare and Maira Aracne

19.10-  
20.10

**Welcome Reception at the Conference Venue  
(Askja building at the University of Iceland campus)**

08.30-09.00	<p style="text-align: center;"><b>Registration</b></p>
09.00-10.00	<p style="text-align: center;">(Chair: <i>Aris Leivadeas</i>)</p> <p style="text-align: center;"><b>Keynote Talk: “The Bottlenecks in Advancing Foundation Models for Internet of Things (IoT) Applications”</b></p> <p style="text-align: center;"><i>Prof. Tarek Abdelzaher</i></p>
10.00-10.30	<p style="text-align: center;"><b>Coffee Break</b></p>
10.30-13.00	<p style="text-align: center;"><b>Session 4: Sensing for Agriculture, Environment, and Industry</b> (Chair: <i>Francesco Betti Sorbelli</i>)</p> <ul style="list-style-type: none"> <li> <p>• <b>Kissan-Dost: Bridging the Last Mile in Smallholder Precision Agriculture with Conversational IoT</b> <i>Muhammad Saad Ali, Daanish U Khan, Laiba Intizar Ahmad, Umer Irfan, Maryam Mustafa and Naveed Anwar Bhatti, Muhammad Hamad Alizai</i></p> </li> <li> <p>• <b>PoHAR: Understanding Hyperlocal Human Activities with Pollution Sensor Networks</b> <i>Prasenjit Karmakar, Karthik Reddy, Sandip Chakraborty</i></p> </li> <li> <p>• <b>Heterogeneous Ensemble Learning for Fault Diagnosis in Smart Manufacturing</b> <i>Farzana Haque Chowdhury, John Violos, Aris Leivadeas</i></p> </li> <li> <p>• <b>BEAVER: Battery-Free Edge AI for Visual Environmental Recognition</b> <i>Yinze Li, Van Vu Bui, Samer Nasser, Henrique Duarte Moura, Ritesh Kumar Singh, Sam Michiels, Jeroen Famaey, Danny Hughes</i></p> </li> <li> <p>• <b>Recognising Construction Vehicle Activity in Low-Frequency Surveillance Imagery and Its Association with Local Air Quality” (short paper)</b> <i>Dan-Cristian Ploesteanu, Arda Satici, Deepak Yeleshetty, Rob Bemthuis</i></p> </li> <li> <p>• <b>Eco-NeRF: Energy-Aware Cloud-to-Edge Training and Deployment of Neural Radiance Fields for Satellite IoT</b> <i>Kriti Ghosh, Braveenan Sritharan, Lakshmish Ramaswamy, In Kee Kim, Suchendra M Bhandarkar, Deepak Mishra, Aditya Joshi and Nancy O'Hare</i></p> </li> </ul>
13.00-14.00	<p style="text-align: center;"><b>Lunch</b></p>
14.00-15.30	<p style="text-align: center;"><b>Session 5: Multimodal Health, Biometrics, and Video Analytics</b> (Chair: <i>Theofanis Raptis</i>)</p> <ul style="list-style-type: none"> <li> <p>• <b>Task-Driven Diffusion Denoising for Robust Multimodal Behavioural Biometrics</b> <i>Duc Van Le, Smayan Gupta, Fariza Rashid, Rahat Masood, Gustavo Batista, Suranga Seneviratne, Aruna Seneviratne</i></p> </li> </ul>

- **Can a Classifier Replace the Human? Box-Level Surrogates for Low-Annotation Object Detection**  
*Francesco Betti Sorbelli, Papiya Das, Lorenzo Palazzetti, Cristina M. Pinotti*
- **Modeling and Performance Evaluation of DNN Splitting and Intelligent Offloading for AI-Based IoT Video Analytics**  
*Weiyang Qian, Rodolfo W. L. Coutinho, Azzedine Boukerche*
- **Cybersecurity Simulation and Testing of Border Checkpoint Operations Using Digital Twin Technology” (short paper)**  
*Rohith Prakash, Naghmeh Moradpoor, Leandros A. Maglaras*

16.00-  
22.30

**Excursion with buses and guided tours and Banquet**  
**Buses leaving at 16:00 (firm)**

08.30-09.00	<b>Registration opens</b>
09.00-10.00	<p>(Chair: Sotiris Nikolettseas)</p> <p><b>Keynote Talk: “From Digital Twins to Cognitive Twins: Closing the Metacognitive Loop in Distributed Sensor Networks”</b></p> <p>Prof. Ian Akyildiz</p>
10.00-10.30	<b>Coffee Break</b>
10.30-13.00	<p><b>Session 6: UAV, Satellite, and Swarm Intelligence</b></p> <p>(Chair: Keiichi Yasumoto)</p> <ul style="list-style-type: none"> <li>• <b>ORION: Olfactory and RF Multimodal Sensing for UAV-Based Localization of Disaster Victims</b> <i>Guillermo Benito-Calvino, Ahmed Boubrima, Alessandro Renzaglia, Herve Rivano, Zhambyl Shaikhanov (best paper candidate)</i></li> <li>• <b>OASIS: Occlusion Aware Semantic Inference and Sensing for Fused UAV-Satellite Driven Disaster Damage Assessment</b> <i>Md Tahmid Rashid, Md Jawad Siddique, Abdus Shaqur</i></li> <li>• <b>SwarmIT: Turn Your Collection of Robots into a Robust and Programmable Swarm Testbed</b> <i>Alexandre Abadie, Filip Maksimovic, Geovane Fedrecheski, William Takeshi-Pereira, Mališa Vučinić, Danny Hughes, Roderich Gross, Thomas Watteyne</i></li> <li>• <b>UAMBIT: Byte-Budgeted Update Compression with Error-Feedback for Federated Learning</b> <i>Amir Taherkordi, Emad Hammami, Peiyuan Guan</i></li> <li>• <b>A Low-Power Dual-Processor Platform for Snapshot GNSS with Edge-Based GPU Acceleration</b> <i>Chen Jiang, Chien-Chia Huang, Gia Bao Thieu, Yitao Tang, Guillermo Payá-Vayá and Andres Gomez</i></li> </ul>
11.00-13.00	
13.00-14.00	<b>Lunch</b>
14.00-16.00	<p><b>Session 7: Smart Homes, Privacy, and Secure IoT</b></p> <p>(Chair: Ulf Kulau)</p> <ul style="list-style-type: none"> <li>• <b>AdaptHub: An Adaptive, User-Centric, and Privacy-Driven Smart Home Hub</b> <i>Tina Rezaei, Suzan Bayhan, Etienne Riviere, Andrea Continella, Roland van Rijswijk-Deij</i></li> <li>• <b>RoutineShield: Routine-Level Privacy for Smart Homes via Semantic DP Traffic Shaping</b> <i>Chun Yin Chiu</i></li> <li>• <b>Anonymous Command Authorization for IoT Devices Using Zero-Knowledge Proofs</b> <i>Mohammad Mahdi, Ahmad Alqattan and Ameer Mohammed (best paper candidate)</i></li> <li>• <b>Server-Assisted Oblivious Key Distribution for Resource-Constrained Post-Quantum IoT Devices (SAOKD)</b> <i>Ahmad Alqattan, Mohammad Mahdi, Tassos Dimitriou</i></li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Schema-Grounded Agents for Enabling Emergent Multi-Device Reasoning in Smart Environments (short paper)</b> <i>Victor Romero II, Tomokazu Matsui, Yuki Matsuda, Hirohiko Suwa, Keiichi Yasumoto</i></li> </ul>
16.00-16.30	<b>Coffee Break</b>
16.30-18.10	<p style="text-align: center;"><b>Session 8: Efficient IoT Systems, Mobility, and Perception</b> <i>(Chair: Hirohiko Suwa)</i></p> <ul style="list-style-type: none"> <li>• <b>Co-Scheduling of Charging and Transmission in Supercapacitor-Powered IoT</b> <i>Aakriti Jain, Prashant Modekurthy, Abusayeed Saifullah, Marco Brocanelli</i></li> <li>• <b>Virtual Space Switching: Fast Mobility Handoffs for Situated Intelligence</b> <i>Muthucumaru Maheswaran</i></li> <li>• <b>Using Geodata for Improved Path Loss Estimation: Insights from a LoRaWAN Field Study</b> <i>Daniel Szafranski, Moosa Sharafeldin, Andreas Reinhardt</i></li> <li>• <b>At the Edge of the Heart: ULP FPGA-Based CNN for on-Device Cardiac Feature Extraction in Smart Health Sensors for Astronauts</b> <i>Kazi Mohammad Abidur Rahman, Davis Rakhshan and Philipp Luetke, Laura Harms, Ulf Kulau</i></li> </ul>
18.10-18.30	<b>Final Remarks and Closing</b>

Regular papers: 25 minutes  
 Short papers: 15 minutes  
 Poster/Demo papers: 5 minutes

## Workshops Schedule

### Monday, June 22, 2026

- **SecRIoT-SCC 2026 (7th IEEE International Workshop on Security, Reliability of IoT Systems & Supply Chain Cybersecurity)**
- **IoT15 2026 (8th International Workshop on IoT Applications and Industry 5.0)**
- **REFRESH 2026 (6th International Workshop on Real-life Modeling in 5G/6G networks and beyond)**
- **IoT-Green 2026 (2nd International Workshop on IoT-Driven Urban Sustainability and Green Technology)**

### Tuesday, June 23, 2026

- **DISCOLI 2026 (5th International Workshop on Distributed Collective Intelligence)**
- **TI-2026 (3rd International Workshop on Next Generation IoT and AI systems for Trusted, Human-Centered Intelligence )**
- **Wi-DroIT 2026 (8th International Workshop on Wireless Sensors and Drones in Internet of Things )**

### Wednesday, June 24, 2026

- **UrbCom 2026 (8th International Workshop on Urban Computing)**
- **ISIoT 2026 (8th International Workshop on Intelligent Systems for the Internet of Things)**
- **SmaCE 2026 (8th IEEE International Workshop on Smart Circular Economy)**
- **HIEMI 2026 (2nd International Workshop on Hybrid Intelligence for Internet of Everything Models and Implementations)**
- **LS-NoT 2026 (4th International Workshop on Long and Short Range Wireless Technologies Applied to IoT for Networks of Tomorrow)**

## REFRESH 2026 Workshop Program

- 11.00-11.10: Welcome and Introduction (Steering Committee, Workshop Organizers)
- 11.10-11.50: Invited Talk (**Trung Q. Duong**, “Hybrid Classical–Quantum Learning and Optimization for 6G Wireless Networks”)
- 11.50-12.30: Panel (**Valerio Frascolla**, “EU Regulations and Impact on 6G Networks and Terminals”)
- 12.30-13.05: Featured Research Presentation (**Maria Diamanti**, “On the Uncertainties of 3D Networks: The CELESTE Vision”)
- 13.05-14.00: Lunch
- 14.00-16.20: Session 1 (“Advances in Wireless Networks and Radio Technologies”)**
- 14.00-14.20: Mojtaba Mahdavi, “Low-Complexity Wireless Modulation Technique Enabled by In-Memory Computing”
- 14.20-14.40: Maria Diamanti, Panagiotis Charatsaris, Haya Al Kassir, Michail Karavolos, Nikolaos Nomikos, Tugce Kobal, Matthew Andrews, Daniel Dinis, Risto Wichman, Sofia Barkatsa and Symeon Papavassiliou, “Enhancing Spectral-Spatial-Temporal Efficiency of NOMA: Challenges and Design Considerations”
- 14.40-15.00: Michail-Alexandros Kourtis and George Xilouris, “Real-World 5G NR Performance Characterization for Aerial IoT Deployments: Throughput Dynamics, Stability Analysis, and the Energy–Throughput Trade-Off”
- 15.00-15.20: Niels Hendrik Fliedner, Florian Klingler and Henning Trsek, “5GAutoConf: A Rapid Data-Driven Autoconfiguration Tool for 5G Base Stations”
- 15.20-15.40: Deo Chimba, “V2X Architecture for Real-Time Railroad Crossing Safety and Traffic Management”
- 15.40-16.00: Dipanjan Adhikary, Aruzhan Sabyrbek, Sri Likhita Chillakoori and Eirini Eleni Tsiropoulou, “Software-Defined Radio Testbed for Distributed Power Control in Over-the-Air Computation Systems”
- 16.00-16.20: Fabian Göttsch, Oriol Font-Bach, Andreas Benzin, Dennis Osterland, Andre Puschmann, Felix-Christopher Lutz, Wilhelm Keusgen and Giuseppe Caire, “A Modular O-RAN Testbed Based on SRS Open Source O-CU/O-DU and Massive Beams Modular O-RU”
- 16.20-16.50: Coffee Break
- 16.50-18.10: Session 2 (“Architectures and Platforms for 5G/6G Networks”)**
- 16.50-17.10: Maria Belesioti, Jason Diakoumakos, Ioannis Chochliouros, Theodore Zahariadis and Andreas Papadakis, “Implementing End-to-End Zero Trust Architecture in the AIoT-Edge-Cloud Continuum: The CyberNEMO Approach”

- 17.10-17.30: Ozgur Akgul, Vasileios Tsekenis, Sokratis Barmounakis, Panagiotis Demestichas, Panagiotis Charatsaris, Maria Diamanti, Symeon Papavassiliou, Jaap Van de Beek, Amirreza Moradi, Payal Gupta, Panagiotis Botsinis, Antonio Varvara, Sameh Eldessoki, Marcin Ziołkowski, Halina Tarasiuk, Karol Kuczynski, Hasanin Harkous, Pere Garau Burguera, Mårten Ericson, Stefan Wänstedt and Bahare Masood Khorsandi, “ Sustainable 6G Architecture: A Hexa-X-II Perspective”
- 17.30-17.50: Jason Diakoumakos, Maria Belesioti, Ioannis Chochliouros and George Lyberopoulos, “MoniKube: Infrastructure Discovery Model”
- 17.50-18.10: Rajendra Paudyal, Rajendra Upadhyay, Al Nahian Bin Emran, Brienne Douglas, Lisa Donnan and Duminda Wijesekera, “Pi5G: A lightweight 5G Testbed on a Raspberry Pi5”

## Combined IoT15 / IoT-Green Workshops Program

08.30-09.00: Registration

09.00-09.30: Welcome and Introduction (SC Chair, TPC Chairs, General Chairs)

09.30-10.30: Keynote (**Symeon Chatzinotas**, “6G NTN Communication and Edge Computing for Satellite IoT”)

10.30-11.00: Coffee Break

### 11.00-13.05: Session 1 (“IoT15 – Industrial and Smart IoT”)

Mia Pham, Georgios Tsoumplekas, Vladislav Li, Yannis Spyridis, Barbara Villarini, Georgios Th. Papadopoulos, Thomas Lagkas, Panagiotis Sarigiannidis and Vasileios Argyriou **“A Practical Workflow for Synthetic Energy Time-Series Generation and Evaluation for Smart-Energy Forecasting”**

Prince Jose, Sowmiya Sukumaran, Marie-Theres Suer and Lars Wolf **“Can Wi-Fi 7 Meet the Latency and Reliability Demands of Time-Sensitive IIoT Networks?”**

Mateus Molina and Peter Liggesmeyer **“Reference Architecture for Safe Reconfiguration in Smart Factories/Industry 4.0”**

Bipin Thapa, Daniele Alfonso, Lorenzo Bini, Licio Mapelli, Kaspar Schleiser, Romain Fouquet and Emmanuel Baccelli **“Embedded Rust or C Firmware? Lessons from an Industrial Microcontroller Use Case with Ariel OS”**

George Michoulis, Kyros Tsourdinis, Konstantinos Kyranou, Charis Eleftheriadis, Eleftheria Maria Pechlivani, Panagiotis Christakakis, Thomas Lagkas, Vasileios Argyriou and Panagiotis Sarigiannidis **“Benchmarking Blockchain Technologies for Agricultural Applications”**

Md Sadman Siraj, Khalid Azeez Syed, Aisha B Rahman, Maria Diamanti and Eirini Eleni Tsiropoulou **“A Hybrid Wi-Fi–ESB Communication Architecture for Scalable Distributed Counter-Unmanned Aircraft Systems”**

13.05-14.00: Lunch

### 14.00-16.20: Session 2 (“IoT15 – IoT Analytics and Security”)

Milind Rampure, Shadman Sakib, Haley Patel, Zahid Hasan and Nirmalya Roy **“Contactless Respiratory Monitoring on Heterogeneous Mobile Robots: A Multimodal Edge-Computing Framework”**

Mihai-Daniel Pavel, Matteo De Marchi and Grigore Stamatescu **“Edge-Cloud Offloading for Real-Time Perception of Resource-Constrained AMR in IIoT Environments”**

Dimitrios-Christos Asimopoulos, Panagiotis Radoglou-Grammatikis, Antonios Sarigiannidis, Thomas Lagkas, Christos Xenakis, Evangelos Markakis and Panagiotis Sarigiannidis **“Secure Artificial Intelligence with Lightweight Post-Processing Defense against Adversarial Attacks”**

Nipuna Senanayake, Barbara Villarini, Tamas Kiss and Francesco Tusa **“Efficient Hierarchical Federated Learning with Dynamic Cluster Formation for IoT Wearable Analytics”**

Ioannis D. Leonidas, Panagiotis Radoglou-Grammatikis, Evangelos K. Markakis, Michail-Alexandros Kourtis, Thomas Lagkas, George Th. Papadopoulos, Vasileios Argyriou and Panagiotis Sarigiannidis **“Quantum Machine Learning versus Machine Learning for Intrusion Detection in 5G Environments”**

Jade McDonald, Jims Marchang, Caroline F Dalton, and Ning Wang **“SENTRYNet: A User Centric Privacy Preserving IoT Alerting Architecture for Deaf & Hard of Hearing”**

16.20-16.50: Coffee Break

**16.50-18.10: Session 3 (“IoT-Green Workshop”)**

Dongyi Ma, Huanfa Chen, Martin de Jode, Andrew Hudson-Smith and Mo Sha **“Spatial, Temporal and Environmental Effects on LoRa Link Characteristics: Evidence from a Sustainable Sensor Network in London”**

Elena Kakoulli and Venetis Kanakaris **“3D- and Geospatial-Aware Placement of Fixed Urban Sensing Infrastructure: A Focused Review”**

Spyros Lavdas, Ala F. Khalifeh, Wassim El Hajj and Zinon Zinonos **“Temporal Loss Correlation and its Impact on Energy Efficiency in Large-Scale LoRaWAN Deployments”**

Antonio Lyda Paganelli, Patrick Nigri Happ, Adriano Branco and Luca Mottola **“Urban Green Space Classification from Satellite Imagery: A Robustness Evaluation”**

**18.10-19.10: Oral Poster/Demo Session**

19.10-20.10: Welcome Reception

## SecRIoT-SCC Workshop Program

Monday, June 22 (SecRIoT-SCC)

8.30-9.00	Registration
9.00-9.30	Welcome and Introduction (SC Chair, TPC Chairs, General Chairs)
9.30-10.30	Keynote (Symeon Chatzinotas, "6G NTN Communication and Edge Computing for Satellite IoT")
10.30-11.00	Coffee break
11.00-11.15	Welcome from the workshop chairs of SecRIoT 2026
11.15-13.05	<p><b>Session 1 ("IoT Security") Chair Leandros Maglaras</b></p> <p>Nida Zeeshan, Naghmeh Moradpoor and Luigi La Spada, "<b>Attention-Bound Access Control for Mobile IoT Edge Endpoints</b>"</p> <p>Sebastian Hamza, Iulia Stamatescu, Grigore Stamatescu and Emil Pricop, "<b>Hybrid Heuristic and Semantic Classification for Risk Assessment of Exposed MQTT Traffic</b>"</p> <p>Rikard Höglund, Marco Tiloca, Christian Amsüss, Simon Bouget, Shahid Raza, "<b>Onion CoAP: Enabling Onion Routing for the IoT</b>"</p> <p>Dimitris Koutras, Vangelis Malamas and Panayiotis Kotzanikolaou, "<b>A Security and Experimental Analysis of IoT Communication Protocols</b>"</p> <p>Philipp Schubaur, Marco Kleiner and Dominik Merli, "<b>Comparative Analysis of Secure MCU Provisioning Using a Production Authority Model</b>"</p>
13.05-14.00	Lunch
14.00-16.20	<p><b>Session 2 ("IoT Sensing &amp; Resilience") Chair Thomas Welsh</b></p> <p>Michael Georgiades, Charalambia Varnava, Andreas Gregoriades, Iacovos Ioannou, Lakis Christodoulou, Hasan Mahmood Aminul Islam, Kin-Hon Ho and Yun Hou, "<b>From Correlation to Causation in Intrusion Detection Systems: A Double Machine Learning Approach for IoT Network Behaviour Analysis</b>" (short paper)</p> <p>Ilja Siroš, Jakob Heirwegh, Dave Singelée and Bart Preneel, "<b>ThreadFuzzer: A Fuzzing Framework for the Thread Protocol</b>"</p> <p>Hamish Alsop, Leandros Maglaras and Naghmeh Moradpoor, "<b>A novel Serverless Peer-to-Peer End-to-End Encrypted Messaging System</b>"</p> <p>Nubio Vidal, Naghmeh Moradpoor, Michael Robinson and Leandros Maglaras, "<b>Adding a cybersecurity dimension to supplier assurance in aerospace supply chains</b>"</p> <p>Ariel Duschanek-Myers, Thomas Welsh and Helmut Neukirchen, "<b>Cross-Domain Inference for Human Localization: Applying Wi-Fi RSSI Data to CSI-Trained Models</b>"</p>

Mohd. Saalim Jamal, Himank Gupta, Jennifer Simonjan and Enrico Natalizio, **“Throughput Optimization in Bitcoin-based Public IoT Networks via Intelligent Peer Selection”**

**Final Remarks and Closing**

## DISCOLI Workshops Program

08.30-09.00: Registration

09.00-10.00: Keynote (**Tarek Abdelzaher**, "The Bottlenecks in Advancing Foundation Models for Internet of Things (IoT) Applications")

10.00-10.30: Coffee Break

**10.30-13.00: DISCOLI Workshop on DIStributed COLlective Intelligence -**

**Session 1 ("Collective Intelligent HW/SW Systems")**

Philipp Ungrund, Kurt Rothermel and Sukanya Bhowmik "**spaPS: Spatially-Aware Publish-Subscribe Middleware for IoT Systems**"

Andrea Tundis and Claudio Savaglio "**Cyber Resilience supported by AI in CBDC systems: scenarios, applications and limitations**"

Giacomo Cabri, Manuela Montangelo and Filippo Muzzini "**Exploiting Platooning Dynamics to Improve Urban Intersection Throughput**"

Mirko Franco, Salvatore Gatto, Matteo Noro, Lorenzo Perinello and Claudio Enrico Palazzi "**Mining Distributed Collective Intelligence for Accessible Urban Mobility**"

Roberto Cavicchioli, Marco Furini and Giacomo Tagliani "**Collective Signals and Truth Perception in AI-Generated Multimedia**"

Paolo Pagliuca and Alessandra Vitanza "**What Evolutionary Algorithm(s) Should We Use? Towards Preliminary Guidelines from an Exploratory Analysis of Foraging Problems**"

Alessandro Sapienza, Fabio Paglieri, Marco Marini, Sebastiano Munini, Anna Gerna and Rino Falcone "**Informational Nudging and Collective Cooperation under Flood Risk: An Agent-Based Study**"

Hindred Arturo Peña Rodriguez, Franco Cicirelli, Emilio Greco, Antonio Guerrieri, Md Babul Islam, Irfanullah Khan, Carlo Mastroianni, Ermelinda Oro and Andrea Vinci "**Human-Cognitive Buildings Interaction through Smart Gloves**"

Franco Cicirelli, Francesco D'Amore, Antonio Francesco Gentile, Emilio Greco, Gianluca Godino, Antonio Guerrieri, Gabriella Lo Feudo, Luca Lombardo, Carlo Mastroianni, Massimo Micieli, Ermelinda Oro, Andrea Vinci and Samanta Zelasco "**Distributed Intelligence in Smart Agriculture Through Cognitive Tree Modeling**"

13.00-14.00: Lunch

**14.00-15.30: DISCOLI Workshop on DIStributed COLlective Intelligence -**

**Session 2 ("Intelligent Networking and Applications")**

George-Alexandru Tudor, Radu-Ioan Ciobanu and Ciprian Dobre "**Distributed Collective Learning on Mobile Devices: A Real-Hardware FedAvg Evaluation**"

Marica Amadeo, Giuseppe Ruggeri, Antonella Molinaro and Salvatore Serrano **“Collective Semantic Intelligence for Vehicular Crowdsensing over Named Data Networking”**

Javier Prades, Erika Rosas, Juan-Luis Posadas-Yagüe, José M. Cecilia and Pietro Manzoni **“A Lightweight Architecture for Collective Coordination Across Isolated Edge Systems over LPWAN”**

Rafiq Ul Islam, Vincenzo Barbuto, Claudio Savaglio and Raffaele Gravina **“Named Data Networking (NDN) for Collective Network Intelligence: a Smart Museum case study”**

Franco Cicirelli, Antonio Francesco Gentile, Antonio Guerrieri, Md Babul Islam, Qimeng Li, Ermelinda Oro, Luigi Rizzo, Andrea Vinci and Paolo Zicari **“An Architectural Approach for Multimodal Robot Control”**

Thomas Welsh, **“Towards Self-Adaptive Embryonic Systems”**

Federico Corò, Riccardo Fabbian and Claudio E. Palazzi **“GPS-Free Self-Healing Drone Networks via Virtual Spring-Dampers”**

Carmela Comito and Liliana Martirano **“Leveraging Collective Intelligence Signals for Early Misinformation Detection on the Web”**

16.00-22.00: Excursion to the Golden Ring and Banquet (buses depart at 16.00)

## TI Workshops Program

### 10.30-12.45: Session 1 (“AI, IoT and Emerging Technologies”)

10.30-10.45: Welcome and Introduction -Workshop Chair

10.45-11.00 [6] Argyro Mavrogiorgou, Andriana Prentza, Michael Filippakis, Maurizio Megliola, Nikolaos Tousert, Athanasios Kiourtis **“Augmented Reality (AR), Virtual Reality (VR), Mixed Reality (MR) and eXtended Reality (XR) Integration in Artificial Intelligence (AI) Software Systems”**

11.00-11.15 [1] Spyridon Evangelatos, Amalia Ntemou, Paraskevas Bourgos, Nikoleta Tsampanaki, George Bardas, Nikos Kefalakis, Pantelis Lappas **“Information-Theoretic Limits of Minimal Disclosure in IoT-Enabled Digital Food Product Passports”**

11.15-11.30 [11] João Rosas, Filipe Moutinho, Afonso Fernandes-Oliveira, Carolina Lagartinho Oliveira, Paulo Pinheiro, Pedro Maló **“Providing Semantic Interoperability Services in IIoT Environments”**

11.30-11.45 [12] Francisco Marques, André Lourenço, Pedro Silva, Fábio Querido, Bruno Almeida, Pedro Maló **“DESCANT: Human-Robot Collaborative Inline Quality Control for Acoustic Sensor Production”**

11.45-12.00 [2] George Bardas, Nikos Kefalakis, John Soldatos, Grigoris Antonopoulos **“Swarm Learning for Fault Detection in Heterogeneous Multi-Robot PCB Assembly”**

12.00-12.15 [7] George Fatouros, Georgios Makridis, John Soldatos, Dimosthenis Kyriazis, Pedro Malo, George Kousiouris, Giannis Ledakis, Louiza Kachrimani, Panagiotis Rizomiliotis, Bruno Almeida, Despina Tomkou, Kostas Metaxas, Konstantinos Ilias, Christos Gkizelis, Ernstjan De Gooyert, Amin Babazadeh, Kostis Mavrogiorgos, Pepi Paraskevoulakou, Christos Xenakis, Giannis Chouchoulis, Konstantina Tripodi **“CyberAid: AI-Driven Cybersecurity for Financial Service Providers”**

12.15-12.30 [5] Vangelis Malamas, Panagiotis Giannopoulos, Dimitris Koutras **“Agentic Climate Intelligence: A Multi-Agent Architecture for Human-Centered Climate-Resilient Smart Cities”**

12.30-12.45 [9] George Fatouros, Georgios Makridis, George Kousiouris, John Soldatos, Dimosthenis Kyriazis **“An Organization-Scoped LLM Agent Runtime Architecture for Regulated Cybersecurity Operations”**

13.00-14.00: Lunch

### 14.00-15.30: Session 2 (“Trustworthy and Explainable AI”)

14.00-14.15: Introduction - Workshop Chair

14.15-14.30 [3] Tiago Teixeira, Salviano Pinto Soares, Pedro Maló, John Soldatos, Bruno Almeida, Márcio Mateus **“The GenAI Spike: Proposal Submission Trends and Competition in Horizon Europe (2021–2026)”**

14.30-14.45 [10] Georgios Makridis, Georgios Fatouros, John Soldatos, Georgios Katsis, Dimosthenis Kyriazis **“Native Explainability for Bayesian Confidence Propagation Neural Networks: A Framework for Trusted Brain-Like AI”**

14.45-15.00 [8] Ioannis Christou, Konstantinos Chasapas, Charalampos Marantos, Chrysovalanto-Aggeliki Vourtsani, Pantelis Lappas, John Soldatos **“An Explainability Framework For Systems Fusing Base Black Boxes”**

15.00-15.15 [13] Francisco Marques, André Lourenço, Pedro Silva, Marcio Mateus, Daniel Fernandes, Nuno Ferreira, Salviano Pinto Soares, Diana Augusto, Tiago Teixeira **“Curated Uncertainty Exchange: A Deployment Pattern for Trustworthy AI in Expertise-Curated Environments, Motivated by a Heritage-Viticulture Re-Analysis”**

15.15-15.30 [4] Georgios Makridis, Georgios Fatouros, John Soldatos, Georgios Katsis, Dimosthenis Kyriazis **“Persistent and Conversational Multi-Method Explainability for Trustworthy Financial AI”**

16.00-22.00: Excursion to the Golden Ring and Banquet (buses depart at 16.00)

## Wi-Droit Workshops Program

08.30-09.00: Registration

09.00-10.00: Keynote (**Tarek Abdelzaher**, “The Bottlenecks in Advancing Foundation Models for Internet of Things (IoT) Applications”)

10.00-10.30: Coffee Break

**10.30-10.50: Wi-Droit 2026 Workshop Opening**

**10.50-11.50: Session 1 (“AI & Machine Learning for Livestock and Agriculture”)**

Lorenzo Palazzetti, Kuan-Ling Chen and Enrico Casella “**From Drones to Labels: A Semi-Automated Pipeline for Efficient Livestock Segmentation Annotation**”

Andrei Vicol, Dan Popescu and Loretta Ichim “**Crop and Weed Segmentation by an Ensemble of Distilled Models**”

Khouloud Hwerbi, Ichrak Amdouni, Cedric Adjih, Anis Laouiti and Leila Azouz Saidane “**Blockchain-based UAV Marketplace with Machine Learning for Livestock Health Prediction**”

\*\*\* BREAK \*\*\*

**12.00-13.00: Session 2 (“UAV Systems, Autonomy & Infrastructure”)**

Aggelos Tzikas, Manos Koutsoubelias and Spyros Lalis “**Fault Tolerance for MAVLink-based Mission Programs Using Checkpointing and Logging**”

Marius Adrian Dima, Dan Popescu, Andrei Vicol and Loretta Ichim “**Automatic Landing and Battery Charging of a Multicopter Using an Intelligent Solution**”

Rajitha Manellanga, Xenios Theodorou, Michalis Demetriou, Konstantinos Manousakis, Georgios Ellinas and Panayiotis Kolios “**Data Fusion Platform for UAV-based Situational Awareness Using LiDAR Processing and 3D Reconstruction**”

13.00-14.00: Lunch

**14.00-14.45: Keynote**

Enrico Casella “**From Pixels to Phenotypes: Applied AI and IoT Sensing for Poultry and Livestock Health and Productivity**”

**14.45-15.00: Workshop Closing**

16.00-22.00: Excursion to the Golden Ring and Banquet (buses depart at 16.00)

## UrbCom Workshops Program

08.30-09.00: Registration

09.00-10.00: Keynote (**Ian Akyildiz**, "From Digital Twins to Cognitive Twins: Closing the Metacognitive Loop in Distributed Sensor Networks")

10.00-10.30: Coffee Break

### **10.30-13.00: Session 1 ("Federated and Edge Intelligence in Urban Systems")**

-Amir Dodangeh, Eric Samikwa and Torsten Braun. "**FedRAPS: Joint Client Selection and Adaptive Pruning for Resource-Aware Federated Learning**"

-Cláudio Gustavo Santos Capanema, Fabricio Silva, Leandro Villas and Antonio Loureiro. "**From Equality to Proportionality: Contribution-aware Proportional Fairness in Multi-Model Federated Learning**"

-Alfonso Esposito, Ivan Zyrianoff, Milena Mazza and Marco Di Felice. "**LIFT: Client-Shared Latent Space for Federated Learning in Heterogeneous Environments**"

-Gustavo Ccama Marron, Alvaro Henry Mamani-Aliaga and Rómulo W. C. Bustincio. "**FedAdaptSparse: A Sparse Federated Learning Approach to Reduce Latency in Emotion Detection Systems**"

-Antonio Borssato, Daniel Trindade, Giovanni Comarela, Eduardo Zambon, Vinícius Mota and Diego Roberto Colombo Dias. "**Are federated and centralized models alike? A comparative study via XAI**"

-João Vítor Freitas Scarlatelli, Vitória Símil Araújo, Nagib Alexandre Verly Borjaili, Vitor Dias Britto Militão, Yasmin Cassemiro Viegas, Felipe Domingos Da Cunha and Henrique Cota. "**A Federated Learning Approach for Distributed Alzheimer's Disease Diagnosis Using Brain MRI**"

-Weld Lucas Cunha, Luis F. G. Gonzalez, Daniel L. Guidoni and Leandro A. Villas. "**The Cost of Going Bigger: Performance-Efficiency Trade-offs in Federated Learning for Urban Computing**"

-William Arcaya, Edgar Sarmiento Calisaya, Weld L. Cunha, Alvaro Henry Mamani-Aliaga and Rómulo Walter Condori Bustincio. "**CA-SparseFL: Context-Aware Sparse Federated Learning for Energy-Efficient Urban Air-Quality Intelligence**"

13.00-14.00: Lunch

### **14.00-16.00: Session 2 ("Urban Data, Simulation, and Mobility Planning")**

-Miguel Barreto, Carnot Braun, Bruno Biggato, Eduardo Martinho, Allan M. de Souza and Leandro Villas. "**Counterfactual-based Recommendations for Driving Efficiency in Fleet Operations**"

-Wellington Lobato, Guilherme Maia, Milton Marcelini and Leandro A. Villas. "**Double DQN for Traffic Signal Control in a Realistic Scenario: Evaluation with Inductive Loop Detector Data from Campinas-SP**"

-Carolina Idehama, Alexandre Amorim, Rodrigo Minetto and Thiago Silva. **“Classifying Urban Venue Popularity Patterns: A Cross-Country Study of Time Series Methods”**

-Neemias Buceli da Silva, Rodrigo Minetto and Daniel Silver. Stable Behavior, **“Limited Variation: Persona Validity in LLM Agents for Urban Sentiment Perception”**

-Luis Fernando Castilho Maschi, Edivaldo Pastori Pastori, Geraldo Pereira Rocha Filho, Roger Kreutz Immich, Rafael Lopes Gomes and Rodolfo Ipolito Meneguette. **“V-SUMM: Vehicular-Node Data Summarization to Reduce Communication Overhead in VANETs”**

-Edgar S. Oliveira, Clayson Celes, Bruno Santos, Paulo Rettore and Rodolfo Meneguette. **“Characterizing Global Container Shipping: A Data-Driven Approach to Maritime Logistics”**

-Marcela Almeida, Liziane Jorge and Vinicius Mota. **“Beyond dashboards: Promoting urban data visualization for citizens”**

-Léonor Carvalho, Diogo Gonçalves, Miguel Roque Soares, Waldir Moreira and Vítor Grade Tavares. **“Luxor: A Perpetual Batteryless Sensing Device Targeting Real-world Long-life Applications”**

-Harun Mohamed Huka, Ibrahim Tamim and Manar Jammal. **“Stochastic Demand Generation and Predictive Rebalancing for Shared Autonomous Fleets”**

16.00-16.30: Coffee Break

### **16.30-18.10: Session 3 (“Privacy, Security, and Urban Sensing Applications”)**

-Nathanael Lascoux, Saadi Boudjitt, Samia Bouzefrane and Jean-Marc Montenot. **“Towards Location Privacy Protection in the Internet of Drones: Lessons from VANETs”**

-Guilherme Brotto, Iran Ribeiro, Giovanni Comarella, Idilio Drago, Diego Roberto Colombo Dias and Vinicius Mota. **“FlowMIA: Membership Inference Attack on Generative Network Flow Models”**

-Arshia Mortazavinezhad, Mehmet Yağci, Khalil El-Khatib and Glenn Harvel. **“Enhancing the Security of LoRaWAN-Based Radiation Detection Systems Using Hardware Security Module”**

-Gabriel Lucas Santos Moura and Felipe Domingos Da Cunha. **“Deep Learning-Based Convolutional Neural Networks for Oral Lesion Diagnosis: A Comparative Study”**

-Truong Giang Vu, Li Yang and Richard Pazzi. **“Neural Architecture Search for Traffic Prediction: A Survey of Methods, Challenges, and Future Directions”**

-Carnot Braun, Gabriel U. Talasso, Joahannes B. D. da Costa, Leandro A. Villas and Allan M. de Souza. **“A Hybrid Agent-based Navigation System with Semantic Reasoning”**

-Karina Flor Condori Bustincio, Eloisa Lizeth Paredes Cayllahua and Rómulo Walter Condori Bustincio. **“From Friction to Dropout: Visual Multi-Agent Simulation of Adaptive Socratic Friction in Smart Urban Furniture”**

-Rihards Krišlauks, Teodors Eglītis and Andris Vāravš. **“Location-Aware Online Multi-Camera Vehicle Tracking”**

18.10-18.30: Final Remarks and Closing

## ISIoT Workshops Program

10.30-13.00: Session 1 (Intelligent and Secure IoT Systems)

Opening - Michael Georgiades

Michael Savva, Iacovos Ioannou and Vasos Vassiliou. "Evaluation of Adaptive Fuzzy Logic-based IDS (AFLIDS) for the Detection of Jamming Attacks in Vehicular Wireless Networks"

Rizouan Ur Rashid, Naghme Moradpoor, Leandros Maglaras and Nubio Vidal. "A Privacy-Preserving Digital Twin Framework for Smart Car Parking in Smart Buildings"

Iacovos Ioannou, Michael Georgiades, Konstantinos Katzis, Katerina Papanikolaou, Marios Raspopoulos, Christophoros Christophorou, Michael Savva and Vasos Vassiliou. "Graph-Temporal Intrusion Detection for IoT: A Heterogeneous Ensemble Approach"

Varshani Varshani, Yuxiang Huang, Haoxiang Li, Yichao Wang, Calvin Brierley, Budi Arief, George Oikonomou and James Pope. "Unsupervised Machine Learning for Anomaly Detection in Thread IoT Networks"

Md Mahamudur Rahman Maharaz, Mahdin Islam Ohi, Md Ashik Uz Zaman, Abdullah Sajid, Sadia Fahmida Islam, Pulok Akibuzzaman, Md Masum, S M Nafis Shahriar, Nusrat Rahman Aurna, Hasan Mahmood Aminul Islam and Michael Georgiades. "PRIoTP: Towards Context-Aware Partial Reliable Application-Layer IoT Protocol with Edge Intelligence"

Dimitrios Zorbas and Saida Tulebayeva. "AI-Assistance for LoRaWAN Simulators"

Mandana Mahgoli, Ian F. Akyildiz, Teresa Sofia Giesta da Silva, Sigurdur Thor Jonsson, Kristinn Andersen and Saemundur E. Thorsteinsson. "Steering Uncertainty: Physics-Informed Mean Field Games for AUV Swarm Coordination in Underwater IoT"

Iacovos Ioannou, Marios Raspopoulos, Michael Georgiades, Christophoros Christophorou, Ala Khalifeh and Vasos Vassiliou. "DRL-based Position-Aided Beam-Management in RIS-Enabled Indoor Environments"

13.00-14.00: Lunch

14.00-16.20: Session 2 (Embedded AI, Edge Intelligence and Federated Learning)

Zhaolan Huang, Kaspar Schleiser, Gyungmin Myung and Emmanuel Baccelli. "Ariel-ML: Embedded Rust Leveraging Multicore for Neural Networks on Heterogeneous Microcontrollers"

Zhaolan Huang and Emmanuel Baccelli. "TinyDèjàVu: Smaller RAM and Faster Inference with Neural Networks on MCUs for Sensor Data Streams"

Momin Ali, André Stenger, Til Arkenberg, Laura Harms and Olaf Landsiedel. "TWIST: Trains

Lucas van Middendorp, Saeed Khalilian Gourtani and Nirvana Meratnia. "SKIPNAS: Designing Layer-Skipping Networks via Compute-Aware Neural Architecture Search"

Juan Felipe Gutiérrez Gómez, Bilel Mejri, Negar Halakou, Chien-Chia Huang and Andres Gomez. "Federated Keyword Spotting on Constrained IoT Devices over Thread and CoAP"

Antonios Makris, Christos Dousis, Emmanouil Kritharakis, Stavros Bouras and Konstantinos Tserpes. "A Comparative Study of Federated Learning Aggregation Strategies under Homogeneous and Heterogeneous Data Distributions"

Milena Mazza, Alfonso Esposito, Ivan Zyrianoff, Francesco Restuccia and Marco Di Felice. "Federation Is Not Enough: Knowledge Distillation Warm-Up and Federated Training"

Saher Javaid, Iacovos Ionnou, Muhammad Sadiq and Yasuo Tan. "Loss Sensitivity Index-Based Loss-Aware Energy Management Framework for DC Microgrids with Seasonal Analysis"

16.20-16.50: Coffee Break

16.50-17.50: Session 3 (Satellite, Agricultural and Environmental IoT)

Kathy Bannigan, Shagufta Henna, Stephen Seawright and Salem Gharbia. "Conditional Adversarial Residual Training for Cloud Removal and High-Fidelity Image Reconstruction in Satellite IoT-Based Coastal Monitoring"

Lorenzo Palazzetti, Mireia Molins and Enrico Casella. "An IoT-Enabled RGB-D Approach for Weight Prediction in Turkey Production"

Inesa Movsesyan. "Humidex-Based Heat-Risk Detection from IoT Environmental Sensors"

## Combined SmaCE / HIEMI / LS-NoT Event Workshops Program

**08:30 – 09:00** Registration

**09:00 – 10:00** DCOSS-IoT 2026 Keynote – Ian Akyildiz, “From Digital Twins to Cognitive Twins: Closing the Metacognitive Loop in Distributed Sensor Networks”

**10:00 – 10:30** Coffee Break

### **10:30 – 13:00 Session 1 — SmaCE Workshop**

<b>10:30 – 10:36</b>	<b>Welcome by SmaCE organizers</b>
<b>10:36 – 10:54</b>	George Alexandris, Ana Teresa Correia, Styliani Stavroulaki and Ioannis Basdekis. <b>“A Three-Pillar Methodology for Identifying Generic Business Models for Digital Product Service System Passports”</b>
<b>10:54 – 11:12</b>	Chloé Greenstreet, Anastasia Vayona and Jane Henriksen-Bulmer. <b>“From Confusion to Compliance: A Deployment-Ready Mobile Application for Harmonising Recycling Guidance Across UK Local Authorities”</b>
<b>11:12 – 11:30</b>	Anastasia Vayona. <b>“Micro-Credential Ecosystem for Digital Circular Economy: The 3D-CIRCULAR Approach”</b>
<b>11:30 – 11:48</b>	Theofanis Raptis, Rafayel Mkrtychyan and Hrant Khachatrian. <b>“Revisiting Traditional Wireless Operations Through the Lens of Large Synthetic Datasets”</b>
<b>11:48 – 12:06</b>	Mohammed Fahad Ali, Dominique Briechle, Marit Briechle-Mathiszig, Tobias Geger and Andreas Rausch. <b>“Efficient Waste Sorting for Circular Economy: A Confidence-guided comparison between One-Vs-All and One-Vs-Rest Classification Strategies with Human-in-the-Loop for Automated Waste Sorting”</b>
<b>12:06 – 12:24</b>	Thomas Spachos and Petros Spachos. <b>“Performance Evaluation of Low-Power Wireless Networks for Indoor Localization”</b>
<b>12:24 – 12:42</b>	Cynthia Reynolds. <b>“Ontology as Distributed Coordination Infrastructure for the Circular Economy”</b>
<b>12:42 – 13:00</b>	Amalia Damianou, Antonis Voulgaridis, Konstantinos Votis and Dimitrios Tzouvaras. <b>“AI-enhanced Situational Awareness for Smart Circular Economy Infrastructures: A Cyber Range-based Approach”</b>

**13:00 – 14:00** Lunch

## 14:00 – 16:00 Session 2 — HIEMI Workshop

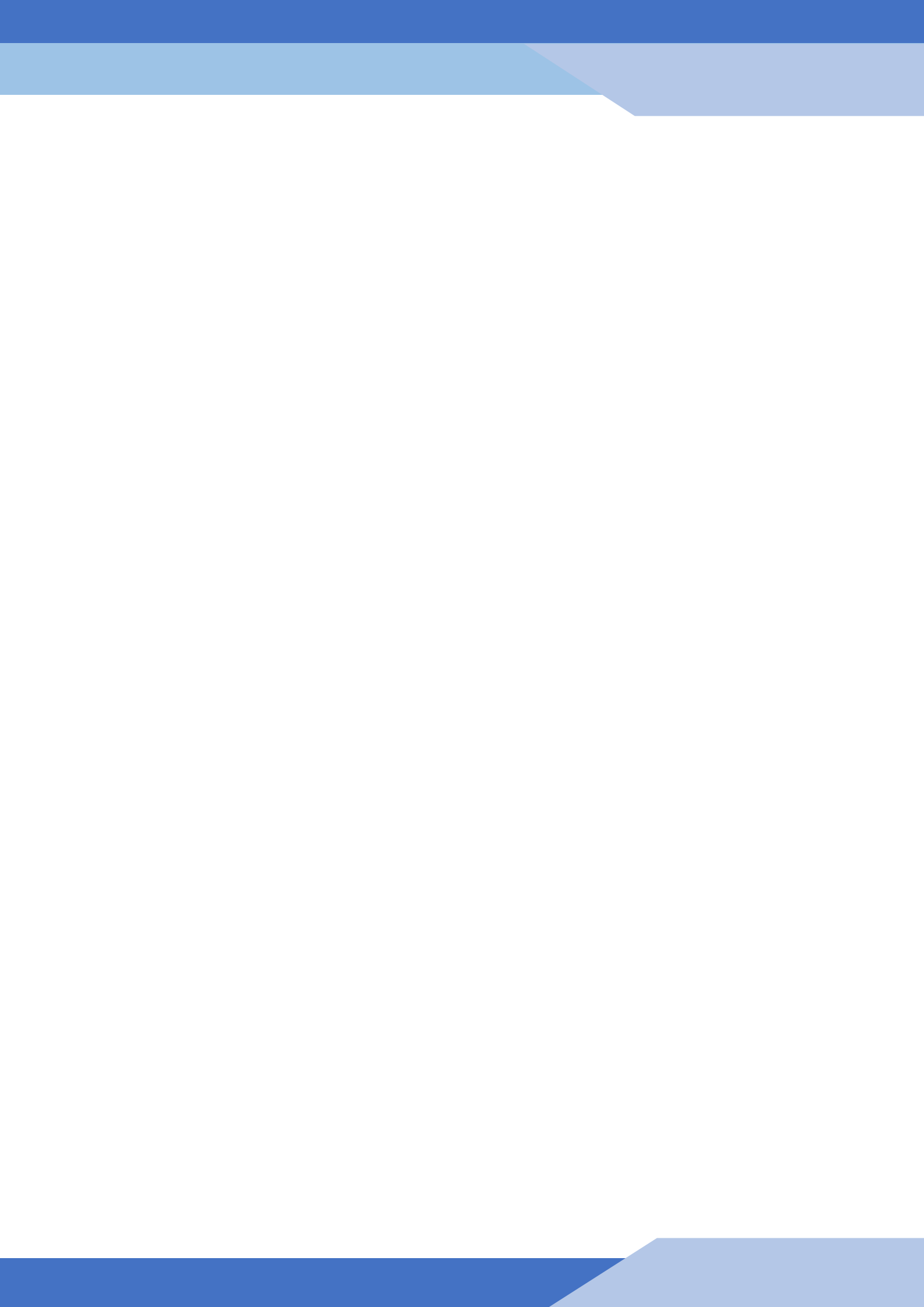
14:00 – 14:20	Yixin Shen, Victor Romero II and Keiichi Yasumoto. <b>“Human-Readable Morphological Primitives for LM-Based Analysis of IoE User Interactions”</b>
14:20 – 14:40	Tariq Naeem, Massimiliano Pirani and Luca Spalazzi. <b>“Oracle-Ready Evidence Batching for Concurrent Medical IoT Sensor Writes on a Move Blockchain”</b>
14:40 – 15:00	Davis Rakhshan, Lucas Bublitz and Ulf Kulau. <b>“From Sound to Species: A Modular Acoustic Sensor for Biodiversity Monitoring”</b>
15:00 – 15:20	Andrea Tundis and Francesco Cauteruccio. <b>“Exploring privacy in smart digital wallets for CBDC payments”</b>
15:20 – 15:40	Jared Hall. <b>“PoE-OPR: Predictive-Responsive Operational Policy Conflict Resolution for CPS/IoT Systems”</b>
15:40 – 16:00	Jared Hall. <b>“POE-DC: Predictive Conflict Detection for CPS/IoT Systems”</b>

16:00 – 16:30 Coffee Break

## 16:30 – 18:10 Session 3 — LS-NoT Workshop

16:30 – 16:40	Welcome by LS-NoT organizers
16:40 – 17:00	Matthieu Silard, Anne-Cécile Orgerie, Nicolas Montavont and Georgios Z. Papadopoulos. <b>“Trickle Timer in G3-PLC Networks: Performance Evaluation of LOADng Flooding with ns-3”</b>
17:00 – 17:20	Carl Dickinson, Shishir Nagaraja and Mujeeb Ahmed. <b>“Energy-Aware LoRaWAN Design for Long-Lived Agricultural Sensing: Insights from a Multi-Year Deployment and Controlled Platform Comparison”</b>
17:20 – 17:40	Michael Georgiades, Artemis Kontou and Charalambia Varnava. <b>“Explainable Bluetooth DoS Detection in IoMT Networks Using Protocol-Aligned Concept-Supervised SENN”</b>

17:40 – 18:00 Final Remarks and Closing



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