# On site Activities (preliminary) Program

**NOVOTEL BARCELONA CORNELLÀ**
**Avenida Maresme 78**
**08940, CORNELLA DE LLOBREGAT**
**BARCELONA**
**+34 934 74 70 00**
H3667@accor.com

**Updated as of Oct 15, 2025**

**The program will be continuously updated.**

**NetWare 2025:** https://www.iaria.org/conferences2025/ProgramSECURWARE25.html

**SocSys 2025:** https://www.iaria.org/conferences2025/ProgramMODERNSYSTEMS25.html

**TechWorld 2025:** https://www.iaria.org/conferences2025/ProgramEXPLAINABILITY25.html

**SustainableDigitalization 2025:** https://www.iaria.org/conferences2025/ProgramCOCE25.html

**Timezone converter: https://www.worldtimebuddy.com**

| Session conference rooms | Room #A | Room #B | Room #C |
|---|---|---|---|
| Plenaries | Room #A | | |

**Sunday, Oct 26**

| | |
|---|---|
| 11:00 | **Registration starts**<br>The registration desk is located in front of the conference rooms<br>Open during the entire conference |
| 12:30 - 12:45 | **Welcome session** |
| | |
| 12:45 - 13:30 | **Tutorial I**<br>**Theme:** The Anatomy of Agentic Frameworks and Practical Use Cases<br>**Speaker**<br>Prof. Dr. Petre Dini, IARIA, USA/EU<br>**Chair**<br>Ali Recai Yekta |
| 13:30 - 13:45 | **Coffee** |
| 13:45 - 14:30 | **Session 1 [GREEN]** |
| 14:30 - 14:45 | **Coffee Break** |
| 14:45 - 15:45 | **Tutorial II**<br>**Theme:** Building Security Monitoring Solutions with Open Source Tools<br>**Speaker**<br>Co-Founder Ali Recai Yekta, Yekta IT GmbH, Germany |

| | |
|---|---|
| | **Chair**<br>Petre Dini |
| 15:45 - 16:15 | Coffee |
| 16:15 - 17:15 | **Tutorial III**<br>**Theme:** Systems Thinking within the Systems Engineering Paradigm<br>**Speaker**<br>Prof. Paul Martin, University of Maryland, USA / CEO SE-Scholar / INCOSE, USA<br>**Chair**<br>Aspen Olmsted |
| 17:15 - 17:30 | Coffee |
| 17:30 - 18:45 | **Tutorial IV**<br>**Theme:** Secure Software Development<br>Prof. Dr. Aspen Olmsted, Wentworth Institute of Technology, USA<br>**Chair**<br>Paul Martin |
| | |
| 19:00 - 20:00 | **Welcome Cocktail** |

## Monday, Oct 27

| | | | |
|---|---|---|---|
| 09:00 - 10:00 | **Keynote Speech**<br>**Theme:** Reconnaissance to Resilience: A Threat-Led Kill Chain Perspective on Ransomware and Emerging AI-Driven Threats<br>**Speaker**<br>Prof. Dr. Alexander Lawall, IU Internationale Hochschule GmbH, Germany<br>**Chair**<br>Eugen Borcoci | | |
| 10:00 - 10:30 | **Coffee Break** | | |
| 10:30 - 12:15 | **Session 2** | **Session 5** | **Session 8** |
| 12:15 - 12:30 | **Coffee** | | |
| 12:30 – 14:00 | <span style="color:red">**Session 3**</span> | **Session 6** | **Session 9** |
| 14:00 - 15:30 | Lunch on your own | | |
| 15:30 - 17:15 | **Session 4** | **Session 7** | **Session 10** |
| 17:15 - 17:45 | **Coffee break** | | |
| 17:45 - 19:30 | **Panel #1**<br>**Theme:** Cybersecurity Resilience Challenges<br>**Moderator**<br>**Panelists** | | |

## Tuesday, Oct 28

| | |
|---|---|
| 09:00 - 10:00 | **Keynote Speech**<br>**Theme:** Stochastic Spatiotemporal Multi-Agent Path Planning with Knowledge Graphs<br>**Speaker**<br>Dr. Edward Arthur Holmberg, University of New Orleans, USA<br>**Chair**<br>Eugen Borcoci |

| | | | |
|---|---|---|---|
| 10:00 - 10:30 | Coffee Break | | |
| 10:30 - 12:15 | **Session 11** | **Session 14** | **Session 17** |
| 12:15 - 12:30 | **Coffee** | | |
| 12:30 - 14:00 | **Session 12** | **Session 15** | **Session 18** |
| 14:00 - 15:30 | Lunch on your own | | |
| 15:30 - 17:15 | **Session 13** | **Session 16** | **Session 19** |
| 17:15 -17:45 | **Coffee break** | | |
| 17:45 - 19:30 | **Panel #2**<br>**Theme: Health and Digital Services**<br>**Moderator**<br>**Panelists** | | |

## Wednesday, Oct 29

| | |
|---|---|
| 09:00 - 10:00 | **Keynote Speech**<br>**Theme:** Enhancement of Medical Images for Improved Diagnosis and Treatment<br>**Speaker**<br>Dr. Simin Mirzaei, University of British Columbia, Canada<br>**Chair**<br>Edward Arthur Holmberg |

| | | | |
|---|---|---|---|
| 10:00 - 10:30 | **Coffee Break** | | |
| 10:30 - 12:15 | **Session 20** | **Session 22** | **Session 24** |
| 12:15 - 12:30 | **Coffee** | | |
| 12:30 - 14:00 | **Session 21** | **Session 23** | <span style="color:red">**Session 25**</span> |
| 14:00 - 15:30 | Lunch on your own | | |
| 15:30 - 17:15 | **Open Discussion #1**<br>**Theme: Digital and AI Literacy**<br>**Moderators** | | |
| 17:15 - 17:45 | **Coffee break** | | |
| 17:45 - 19:30 | **Panel #3**<br>**Theme: Complex Systems**<br>**Moderator**<br>**Panelists** | | |
| | | | |
| 19:30 -23:30 | **Conference Dinner**<br>**Novotel Hotel** | | |

## Thursday, Oct 30

| | |
|---|---|
| 09:00 - 10:00 | **Keynote Speech**<br>**Theme:** Path Planning Advances in Multi-UAV Networks<br>**Speaker**<br>Prof. Dr. Eugen Borcoci, National University of Science and Technology<br>POLITEHNICA Bucharest, Romania<br>**Chair**<br>Andre Schneider de Oliveira |

| | |
|---|---|
| 10:00 - 10:30 | **Coffee Break** |
| 10:30 - 12:15 | **Panel #4**<br>**Theme: Sustainability**<br>**Moderator**<br>**Panelists** |
| 12:15 - 13:45 | Lunch on your own |
| 13:45 - 15:30 | **Session 26** |
| 15:30 - 15:45 | **Coffee** |
| 15:45 -17:00 | <span style="color:red">**Session 27**</span> |
| 17:00 - 17:30 | **Coffee break** |
| 17:30 - 18:00 | **Open Discussion #2**<br>**Theme:** Accessibility and AI-based Services<br>**Moderators** |
| 18:00 – 18:15 | **Closing Session**<br>**Farewell** |

## <span style="color:red">Recommended tourist objectives to be visited on your own:</span>

- General information: www.barcelonatourguides.com
- Contact: info@barcelonatourguides.com

## Barcelona
Prepare your best places to see in Barcelona: https://youtu.be/XVqpOCPg_Y4
- Park Güell
- Sagrada Familia
- Picasso Museum
- Gaudi Museum
- Museum of Catalan Art
- Montjuic Hill
- La Rambla
- La Marina

## Girona
Salvador Dali Museum [one day trip from Barcelona]

## <span style="color:red">Detailed Sessions</span>

## Session 1 [GREEN] Room <span style="color:red">A</span> Sunday - early afternoon
Session Chair:

80014 Brains Without Brawn: Evaluating CPU Performance for Code Generation with Large Language Models
Miren Illarramendi Rezabal, Mondragon Goi Eskola Politeknikoa JMA S.Coop, Spain

## Session 2 [SECURWARE] Room <span style="color:red">A</span> Monday - morning
Session Chair: Jalpa Soni

30036 Comparison of Password-Authenticated Key Exchange Schemes on Android
Jörn-Marc Schmidt, IU Internationale Hochschule GmbH, Germany

30046 The Balanced Chance & Cyber Risk Card: Extending Reichmann's Multidimensional Controlling
Framework for C Level Steering in German SMEs
Maik Drozdzynski, IU International University, Germany

30071 Quantifying Persuasion - A Comparative Analysis of Cialdini's Principles in Phishing Attacks
Alexander Lawall, IU International University of Applied Sciences, Germany

30085 A Comparative Study of Machine Learning and Quantum Models for Spam Email Detection
Fan Wu, Tuskegee University, USA


**Session 3 [TBD] Room A Monday - early afternoon**
Session Chair:


**Session 4 [MODERN SYSTEMS, SENSORCOMM] Room A Monday - afternoon**
Session Chair: Maik Drozdzynski

10019 Q-Learning Performance on the CartPole Environment Under Observation Noise and Reward Variants
Fan Wu, Tuskegee University, USA

10011 A Group-Based Access Coordination Scheme for Low-Latency and High-Throughput IoT over
IEEE 802.11ah
Seung-ha Jee, Sungshin Women's University, Republic of Korea
Il-Gu Lee, Sungshin Women's University, Republic of Korea

10025 A Time-based Sensor Data Analysis for Pre-Fall Prediction using Machine and Deep Learning
Approaches
Nazia Pathan, Queen Margaret University, UK


**Session 5 [SENSORCOMM] Room B Monday - morning**
Session Chair: Mathias Gerstner

10030 Machine Learning-Based Joint TX Power and RX Sensitivity Control for Overlapping Basic Service
Set Interference Mitigation in Dense Internet of Things Wireless Networks
Jin-Min Lee, Sungshin Women's University, Republic of Korea

10034 ScreenLeak: Exploiting Screen Savers for Covert Long-Distance Data Exfiltration and Defense
Ye-Rim Jeong, Sungshin Women's University, Republic of Korea

10038 Invisible Watermarking for Image Data Protection in Sensor Network Environments
Seo-Yi Kim, Sungshin Women's University, Republic of Korea


**Session 6 [VEHICUALR, PREDICTIONS, HEALTHINFO] Room B Monday - early afternoon**

Session Chair: Haadia Amjad

30005 Context-Aware Forecasting of Mobile Network Quality for Autonomous Vehicle Connectivity
Mathias Gerstner, OTH Regensburg, Germany

90100 Field-Level Malaria Detection from Microscopic Images: Deep Learning with a Curated Dataset
Sabrina Nefoussi, Research and Development Unit in Nuclear, Radiology, Toxicology, Biology, and Chemistry, Algeria

30006 Prioritization of 9-1-1 Emergency Calls Using Fusion of Audio Signal Analysis and Speech-to-Text
Transcription for Accurate Urgency Classification
Simin Mirzaei, UBC, Canada


**Session 7 [EXPLAINABILITY] Room B Monday - afternoon**
Session Chair: Atakan Yilmaz

10009 Identifying Confusion Trends in Concept-based XAI for Multi-Label Classification
Haadia Amjad, TUD | Dresden University of Technology, Germany

10012 CAT in the box: A CausalAI - Tsetlin machine duo
Jalpa Soni, Capitole Consulting, Spain


**Session 8 [CSRF] Room C Monday - morning**
Session Chair: Mohamed Lamine Toure

10052 Agrotourism Gamification for Farmer Empowerment
 Pedro Goncalves, Instituto de Telecomunicacoes, Portugal

10064 Efficiency of Rainfed Wheat Production: A Global Assessment Using Data Envelopment Analysis
Amir Dadrasi, Univerzita Karlova, Czech Republic


**Session 9 [PANDEMICS ANALYTICS, HEALTHINFO] Room C Monday - early afternoon**
Session Chair: Ketil Malde

20005 Stochastic compartment model of epidemic spreading in complex networks with mortality and resetting
Thomas Michelitsch, CNRS/Sorbonne Université, France

20008 Statistical and Predictive Analysis to Identify Risk Factors and Effects of Post COVID-19 Syndrome
Milad Leyli-abadi, IRT SystemX, France

90080 Machine Learning-Driven Support Algorithm for Skin Ulcers Preliminary Diagnosis: A Lightweight
Approach for Digital Images Semantic Segmentation and Color-Based Classification
Debora Beneduce, LINKS Foundation, Italy


**Session 10 [COCE] Room C Monday - afternoon**
Session Chair: Austin Schmidt

30008 Multi-source Constrained Machine Learning for Oceanic Parameters Forecasting
Austin Schmidt, University of New Orleans, USA

30031 Machine learning using physics-based backscattering modeling for acoustic identification of mesopelagic organisms
Sander Andre Berg Marx, University of Bergen (UIB), Norway

30035 Accelerating HEC-RAS: A Recurrent Neural Operator for Rapid River Forecasting
Edward Holmberg, University of New Orleans, USA

30053 Integrated Design and Field Validation of MoBI: An Intelligent Buoy for Environmental Data Acquisition
Mariella Sole, University of Cagliari, Italy


**Session 11 [GREEN, SOCIETY TRENDS, CSRF] Room A Tuesday - morning**
Session Chair: Francisco Javier Bermúdez Ruiz

80021 Energy Management of PV-Batteries System for a Rural Micro-Grid Application in Guinea
Mohamed Lamine Toure, Universite Le Havre Normandie, France

80029 Electric behavior characterization of lithium iron phosphate batteries as a function of operating temperature
Ibrahima Toure, Universite Le Havre Normandie, France

40008 Using 2D and 3D Desktop Based Virtual Avatar Environments to weaken Zoom Fatigue in Tertiary Education
Gerhard Hube, University of Applied Sciences Würzburg-Schweinfurt, Germany

10059 Differences in Exit Propagation of by Cuttings for Cistus ladanifer and Cistus Cyprius
 Pedro Vicente Mauri Ablanque, Instituto madrileño de Investigación y desarrollo rural, agrario y almientario (IMIDRA), Spain

**Session 12 [HEALTHINFO] Room A Tuesday - early afternoon**
Session Chair: Carolin Poschen

90061 Discrimination by Deep Learning of 1Hz Difference in Auditory Cortex using fMRI Activation Patterns
Kyoko Shibata, Kochi University of Technology, Japan
Yoshitaka ooyashiki, Kochi University of Technology, Japan

90067 From Text to Code: Predicting Abbreviated Injury Scale 2015 from Clinical Narratives
Chien-Ming Lee, Kaohsiung Medical University Hospital, Kaohsiung Medical University, Taiwan

90072 Hypothermia and Its Association with Mortality Among Major Trauma Patients in a Tropical Climate: A Retrospective Study from Southern Taiwan
Pei-Ling Lee, Kaohsiung Medical University Hospital, Kaohsiung Medical University, Taiwan


**Session 13 [HEALTHINFO] Room A Tuesday - afternoon**
Session Chair: Kyoko Shibata

90076 From Hospitals to Researchers: A Data-Trustee Infrastructure to Search and Use FHIR-Data for Retrospective Medical Research
Carolin Poschen, Trier University of Applied Sciences, Germany

90094 Using a Large Data Model Explorer to Maintain a Healthcare Information System
Francisco Javier Bermúdez Ruiz, University of Murcia, Spain

90115 Using Data and Artificial Intelligence to Enable Successful Hospital at Home Programs
Jamie McGlothlin, RSM US LLP, United States


**Session 14 [EXPLAINABILITY, SECURWARE] Room B Tuesday - morning**
Session Chair: Jyrki Penttinen

10024 RanXplain: Explaining Rankings in Recommendation Systems
Atakan Yilmaz, Trendyol, Turkey
Nuray Eylul Erler, Trendyol, Turkey
Emre Atilgan, Trendyol, Turkey

10030 Bridging the Domain Gap: Evaluating Fact-Grounded Knowledge Graph Narratives for Explainable AI in Clinical Decision Support
Valentin Göttisheim, Furtwangen University, Germany

30061 A Modular and Flexible OPC UA Testbed Prototype for Cybersecurity Research
Sebastian Kraust, OTH Regensburg, Germany


**Session 15 [MODERN SYSTEMS, AIVTS] Room B Tuesday - early afternoon**
Session Chair: Valentin Göttisheim

10016 An Interference-Aware vCPU Scheduling Framework for Paravirtualized Real-Time Industrial Control Systems
Jessica Müller, Bosch Rexroth AG, Germany

50022 Design Feasibility and Link Budget Assessment of Aerial 5G IoT and eMBB Connectivity
Jyrki Penttinen, Alphacore Inc., USA

50032 Design of Infrastructure-Based Prescriptive Control Use Cases in Cooperative Autonomous Driving
Ki hun Jang, ITS KOREA, South Korea


**Session 16 [SECURWARE] Room B Tuesday - afternoon**
Session Chair: Logan McMahon

30028 General Conversion Scheme of Card-based Protocols for Two-colored Cards to Updown Cards -   The Number of Cards for Computing an Arbitrary Function
Takumi Sakurai, Nagoya University, Japan
Yuichi Kaji, Nagoya University, Japan

30030 From ECU to VSOC: UDS Security Monitoring Strategies
Ali Recai Yekta, Yekta IT GmbH, Germany

30034 DeepAuthVerify - A Modular Framework for Deepfake Detection in Facial Authentication Systems
Kristina Schaaff, IU International University of Applied Sciences, Germany

30049 Supporting the Security Modelling in Operational Technology by identifying capacities of Hidden Channels in ICS protocols
Sönke Otten, Otto-von-Guericke University, Germany


**Session 17 [COCE] Room C Tuesday - morning**
Session Chair: Anna Wenda-Piesik

30003 Evaluating Hyperparameter Selection Techniques for the Ratio-Coupled Loss Function
Austin Schmidt, University of New Orleans, USA

30016 Simulation-Based Study of Propulsion and Control of an AUV in Current-Affected Environments
Mefti Aymen, Ecole Militaire Polytechniques, Algeria

30021 Operationalizing and Testing Machine Learning Models for Acoustic Target Classification
Nils Olav Handegard, Institute of Marine Research, Norway

30028 Semi-Supervised Object Detection for Marine Life Monitoring using Temporal Information
Ketil Malde, Institute of Marine Research, Norway


**Session 18 [CEEE, CSRF] Room C Tuesday – early afternoon**
Session Chair: Jacqueline Humphries

40019 Global Energy Transition – Issues and Options
Puja Bhetwal, RIZQ/YUNUS WEFnex Hub AIT, Thailand
Mahmood Ahmad, RKH-WEFnex, Thailand

40023 Comparative Analysis of PM2.5 Air Quality Between Old and Newly Developed Residential Areas in Karbala City Using a Low-Cost Monitoring System
Hussein Abd Ali Hatif Alsaadi, Al-Zahrawi University College, Karbala, Iraq

10045 Effect of Mobile Agrivoltaic Shading on the Growth and Yield of Coriander (Coriandrum Sativum L.) under Field Conditions in Poland
Anna Wenda-Piesik, Bydgoszcz University of Science and Technology, Poland

**Session 19 [CSRF] Room C Tuesday - afternoon**
Session Chair: Niklas Lindskog

10014 An Evaluation of the Use of Sensors for the Detection of Emissions in Slurry Management
Jacqueline Humphries, Technological University of the Shannon, Ireland

10023 Cereals Supply-chain Traceability using Blockchain and IoT Technology
George Adamides, Agricultural Research Institute, Cyprus

10047 Induction of Volatile Organic Compounds in Chrysanthemum Plants Following Infection by

Rhizoctonia Solani [PRESENTATION]
Dariusz Piesik, PBS Bydgoszcz University of Science and Technology, Poland


**Session 20 [SECURWARE] Room A Wednesday - morning**
Session Chair: Tobias Frauenschläger

30015 Threat-Based Vulnerability Management: Mapping CVEs to the MITRE ATT&CK Framework
Logan McMahon, Queen's University Belfast, Northern Ireland

30018 Secure Software Brownfield Engineering – Sequence Diagram Identification
Aspen Olmsted, Wentworth Institute of Technology, USA

30023 Identification of Dual Processes Using Power Side-channels
Niklas Lindskog, Ericsson, Sweden


**Session 21 [SECURWARE] Room A Wednesday - early afternoon**
Session Chair: Kévin Touchet

30066 Towards Post-Quantum-Ready Automated Certificate Lifecycle Management in Operational Technology
Ayham Alhulaibi, Maschinenfabrik Reinhausen Regnsburg, Germany

30074 A Modified Schnorr Sigma Protocol and Its Application to Isogeny-Based Identification
Mahdi Mahdavi Oliaee, Fundació per a la Unversitat Oberta e Catalunya, Spain

30057 Improving Crypto-Agility in Operational Technology through Exchangeable Smart Cards
Tobias Frauenschläger, OTH Regensburg, Germany


**Session 22 [SENSORDEVICES, CENICS]  Room B Wednesday - morning**
Session Chair: Edward Holmberg

20022 Development of an Artificial Fingertip with a High-Sensitivity 3-Axis Force Tactile Sensor Embedded for Robotic Hands
Bo-Gyu Bok, Korea Research Institute of Standards and Science, Republic of Korea

20026 Fast, Sensitive and Distributed Optical Fiber Detection of Hydrogen Gas [PRESENTATION]
Kévin Touchet, CEA, France

50006 Adaptive Architectures for Forward Error Correction
Sergei Sawitzki, FH Wedel (University of Applied Sciences), Germany


**Session 23 [PANDEMICS ANALYTICS/COAI special track] Room B Wednesday - early afternoon**
Session Chair: Les Sztandera

Accepted papers to be announced


**Session 24 [HEALTHINFO] Room C Wednesday - morning**
Session Chair: Yoshitaka Ooyashiki

90119 Leveraging Observational Medical Outcomes Partnership (OMOP) Data to Populate Disease Registries
Jamie McGlothlin, RSM US LLP, USA

90105 Electronic Health Records and the Archival Question: Shared Responsibility as a Panacea
Mehluli Masuku, Sorbonne University Abu Dhabi, United Arab Emirates

**Session 25 [TBD] Room C Wednesday - early afternoon**
Session Chair:

**Session 26 [CADAT, SENSORDEVICES] Room A Thursday - early afternoon**
Session Chair: Eugen Borcoci

20014 Advanced Statistical Analysis of Physiological and Spectral Traits for the Early Detection of Xylella fastidiosa in Almond Trees
José Ramón Torres-Martín, Universidad Rey Juan Carlos, Spain

10019 Explainability Analysis for Skill Execution
Khatina Sari, Hochschule Bonn-Rhein-Sieg, Germany

20037 Spectral and Angular Analysis of Reflectance in Mobile Robot Prototypes under Controlled Artificial Lighting
Andre Schneider de Oliveira, Universidade Tecnológica Federal do Paraná, Brazil
Ronnier Frates Rohrich, Universidade Tecnológica Federal do Paraná, Brazil

20015 Predictive Inspection of Vegetation Encroachment on Power Lines using Line-Crawling Robot and Multimodal Sensor
Ronnier Frates Rohrich, Universidade Tecnológica Federal do Paraná, Brazil
Andre Schneider de Oliveira, Universidade Tecnológica Federal do Paraná, Brazil


**Session 27 [TBD] Room A Thursday - afternoon**
Session Chair:

====================