

Program Detail

September 25 (Monday), Aula Magna

13:30 - 14:00 Registration

14:00–15:40 **The 1st International Workshop on Machine Learning for Autonomic System Operation in the Device-Edge-Cloud Continuum (MLSysOps 2023) - Paper Presentations (Chairs: Raffaele Gravina and Spyros Lalīs)**

14:00 - 14:05 Welcome and Opening

512 Marco Loaiza, Dimitris Chatzopoulos, Claudio Savaglio, Raffaele Gravina, Spyros Lalīs, Agents in the computing continuum: the MLSysOps perspective

1567 Alexandros Patras, Foivos Pournaropoulos, Nikolaos Bellas, Christos D. Antonopoulos, Spyros Lalīs, Maria Goutha and Anastassios Nanos, A Minimal Testbed for Experimenting with Flexible Resource and Application Management in Heterogeneous Edge-Cloud Systems

1780 Rachel Fanti Coelho Lima, Michele Segata, Muhammad Azfar Yaqub and Antonio Liotta, Experimental Evaluation of Lane Detection Models in Miniature Autonomous Vehicles

7173 Mir Hassan, Leonardo Lucio Custode, Kasim Sinan Yildirim and Giovanni Iacca, FedEdge: Federated Learning with Docker and Kubernetes for Scalable and Efficient Edge Computing

9111 Theodoros Aslanidis, Andreas Chouliaras and Dimitris Chatzopoulos Reinforcement, Learning Techniques for Optimizing System Configuration on the Cloud: A Taxonomy and Open Problems

15:45 – 16:00 COFFEE BREAK

16:00 - 16:30 Invited Talk “Cloud Continuum for enabling large scale AI services”, Prof. Eui-Nam Huh, Kyung Hee University (South Korea) and Discussion

16:30 – 18:00 **The 2nd International Workshop on Hybrid Internet of Everything Models for Industry 5.0 (HIEMI 2023) - Paper Presentations (Chairs: Francesco Cauteruccio and Enrico Corradini)**

16:30 - 16:35 Welcome and Opening

2397 Fulciniti Gessica, Abdellah Kabli, Mario Cannataro, Gaetano Guardasole and Giuseppe Agapito Artificial Intelligence to Analyze Huge Amounts of Juridical Documents via Edge Computing

7051 Francesco Cauteruccio and Enrico Corradini An Overview of Emerging Anomaly Detection Methods and a Research Agenda for Internet of Everything and Industry 5.0 Contexts

8615 Massimiliano Pirani, Alessio Cacopardo, Alessandro Cucchiarelli and Luca Spalazzi A Soulbound Token-based Reputation System in Sustainable Supply Chains

2192 Anestis Papakotoulas, Theodore Milonas, Kakia Panagidi and Stathes Hadjiefthymiades Enhanced Sensor Communication through Trusted Computing

17:55 - 18:00 Discussion and Closing

18:00 - 19:00 Botanical Garden

19:00 - 20:00 Welcome Cocktail

September 25 (Monday), Sala Stampa

13:30 - 14:00 Registration

14:00 - 15:30 **The 2nd Workshop on Security and Privacy in Connected Embedded Systems (SPICES 2023) - Paper Presentations Part 1: Low-layer Security (Chair: Pericle Perazzo)**

14:00 - 14:10 Welcome and Opening

8475 Juris Ormanis, Vladislavs Medvedevs and Janis Judvaitis BEAM: Body Coupled Communication Enabled Amplitude Modulation for Skinput application

6618 Artis Rušīņš, Krišjānis Nesenbergs, Deniss Tiščenko and Peteris Paikens An experimental study: RF Fingerprinting of Bluetooth devices

9948 Pericle Perazzo, Carlo Vallati and Davide Lenzerini APBE: Anti-Piracy Security for SPARTN Augmented GNSS Services

8390 Ufuk Erol, Francesco Raimondo, James Pope, Samuel Gunner, Vijay Kumar, Ioannis Mavromatis, Pietro Carnelli, Theodoros Spyridopoulos, Aftab Khan and George Oikonomou Evaluating Concept Drift Detectors on Real-World Data

15:30 – 16:00 COFFEE BREAK

16:00 - 17:30 **The 2nd Workshop on Security and Privacy in Connected Embedded Systems (SPICES 2023) - Paper Presentations Part 2: High-layer Security (Chair: Michael Baddeley)**

5813 Selina Shrestha, Willian T. Lunardi and Martin Andreoni An Empirical Analysis of MeshShield: a Network Security System for Fully Distributed Networks

7876 Elia Cereda, Alessandro Giusti and Daniele Palossi Secure Deep Learning-based Distributed Intelligence on Pocket-sized Drones

8265 Yang Li, Anna Maria Mandalari and Isabel Straw Who Let the Smart Toaster Hack the House? An Investigation into the Security Vulnerabilities of Consumer IoT Devices

4895 Leif Brötzmann, Patrick Rathje and Olaf Landsiedel Securing Embedded Devices through Obfuscation with Predictable Size and Execution Overhead

17:20 - 17:30 Discussion and Closing

18:00 - 19:00 Botanical Garden

19:00 - 20:00 Welcome Cocktail

September 26 (Tuesday), Aula Magna

8:00 Registration

8:30 Opening Session and Institutional Greetings

9:00 1st Keynote: Prof. Edward Lee, University of Berkeley (U.S.A.), "Trading off Consistency and Availability in Distributed Cyber-Physical System"

*10:00 – 10:30 COFFEE BREAK**

10:30 – 13:00 Session I – Bluetooth and Low-power Energy Devices (Chair: Carlo Alberto Boano)

448 Luisa Schuhmacher, Sofie Pollin and Hazem Sallouha, "ecoBLE: A Low-Computation Energy Consumption Prediction Framework for Bluetooth Low Energy" (Regular)

547 Jagdeep Singh, Michael Baddeley, Carlo Alberto Boano, Aleksandar Stanojev, Zijian Chai, Tim Farnham, Qing Wang and Usman Raza, "BLoB: Beating-based Localization for Single-antenna BLE Devices" (Regular)

618 Hauke Petersen, János Brodbeck, Thomas C. Schmidt and Matthias Wählisch, "IPv6 over Bluetooth Advertisements: An alternative approach to IP over BLE" (Regular)

2806 Bozheng Pang, Tim Claeys, Hans Hallez and Jeroen Boydens, "Modeling the Trade-off between Throughput and Reliability in a Bluetooth Low Energy Connection" (Short)

4441 Weining Song, Stefanos Kaxiras, Luca Mottola, Thiemo Voigt and Yuan Yao, "Silent Stores in the Battery-less Internet of Things: A Good Idea?" (Short)

8068 Jimmy Fernandez Landivar, Pieter Crombez, Sofie Pollin and Hazem Sallouha, "QualityBLE: A QoS Aware Implementation for BLE Mesh Networks" (Regular)

2524 Shadi Attarha and Anna Förster Empowering IoT Applications with Flexible, "Energy-Efficient Remote Management of Low-Power Edge Devices" (WiP)

6798 Navya Sneha Chatharajupalli, Randolph Rotta, Reinhardt Karnapke and Jörg Nolte, "Assessing the Feasibility of Combined BLE and Wi-Fi Communication for High Data Sensing Applications" (WiP)

13:00 - 14:00 LUNCH

14:00 – 15:30 Session II - Machine Learning for Wireless Systems (Chair: Yaqub Muhammad Azfar)

5455 Lingyu Du and Guohao Lan, "FreeGaze: Resource-efficient Gaze Estimation via Frequency-domain Contrastive Learning" (Regular)

9385 Argha Sen, Ayan Zunaid, Soumyajit Chatterjee, Basabdatta Palit and Sandip Chakraborty, "Revisiting Cellular Throughput Prediction over the Edge: Collaborative Multi-device, Multi-network in-situ Learning" (Regular)

8959 Mohammad Shirdel, Mario Di Mauro and Antonio Liotta Relative Information Superiority, “(RIS): a Novel Evaluation Measure for Binary Rule-Based Classification Models” (Short)

356 Mohammad Arif Ul Alam, “Internet of Things Fault Detection and Classification via Multitask Learning” (WiP)

6402 Md Babul Islam, Antonio Guerrieri, Raffaele Gravina, Luigi Rizzo, Giuseppe Scopelliti, Vincenzo D'Agostino and Giancarlo Fortino, “A Review on Machine Learning for Thermal Comfort and Energy Efficiency in Smart Buildings” (WiP)

*15:30-16:00 COFFEE BREAK**

16.00-18.00 Session III - Resource Constrained Sensor Systems (Chair: Michael Baddeley)

1518 Pau Ferrer-Cid, Jose M. Barcelo-Ordinas and Jorge Garcia-Vidal, “Quality-Aware Graph Learning Regularization For Heterogeneous Air Quality Sensor Networks” (Short)

6878 Markus Schuß, Carlo Alberto Boano, Michael Baddeley, Monika Prakash and Kay Römer, “X-Lab: A Federated Testbed Infrastructure to Benchmark Geographically-Distributed Low-Power Wireless Systems” (Regular)

7021 Saba Akbari, Jan Bergman, Thiemo Voigt, Jesper Fredriksson and Klas Hjort, “Feasibility of Communication Between Sensor Nodes on-board Spacecraft Using Multi Layer Insulation” (Regular)

7774 Xiaojian Zhu and Mengchu Zhou, “Target Coverage-optimized Design and Operation of Wireless Visual Sensor Networks” (Short)

7912 Jawaher Alharbi and Arshad Jhumka, “To Checkpoint or Not to Checkpoint: That is the Question” (Short)

8233 Markus Gallacher, Michael Stocker, Michael Baddeley, Kay Römer and Carlo Alberto Boano, “InSight: Enabling NLOS Classification, Error Correction, and Anchor Selection on Resource-Constrained UWB Devices” (Regular)

18.00 SOCIAL EVENT

** Poster and Demo Sessions will be run during the Coffee Breaks.*

The time reserved for the presentation of each regular paper is 20 minutes (including Q&A) while for short papers and work-in-progress (WiP) papers it is 15 minutes (including Q&A).

September 27 (Wednesday), Aula Magna

8:00 Registration

8:30 2nd Keynote: Prof. Ernesto Damiani, Università degli Studi di Milano (Italy), "Dynamic Data Pipelines along the Cloud Continuum"

*9:30 - 10.00 COFFEE BREAK**

10:00 - 12:00 **Session IV - Antennas and Devices (Chair: Valeria Loscri)**

3518 José Álamos, Thomas Schmidt and Matthias Waehlich, "6LoRa: Full Stack IPv6 Networking with DSME-LoRa on Low Power IoT Nodes" (Short)

4131 Carola Rizza and Valeria Loscri, "AIRISC - A mmWave Angle-Insensitive Reconfigurable Intelligent Surface Communication System" (Regular)

8205 Milan Deumer, Moid Sandhu, Sara Khalifa, Brano Kusy, Marco Zimmerling, Kai Geissdoerfer and Raja Jurdak, "A battery-free wearable system for on-device human activity recognition using kinetic energy harvesting" (Short)

8239 Juan Fraire, Alexandre Guitton and Oana Iova, "Recovering Headerless Frames in LR-FHSS" (Regular)

9466 Patrick Rathje and Olaf Landsiedel, "ALADIn: Autonomous Linear Antenna Delay Inference on Resource-Constrained Ultra-Wideband Devices" (Regular)

5943 Kaiwen Cai, Qiyue Xia, Peize Li, John Stankovic and Chris Xiaoxuan Lu, "Robust Human Detection under Visual Degradation via Thermal and mmWave Radar Fusion" (Regular)

12:00 - 13:00 **Session V - Cloud, Edge and Resource Allocation - Part 1 (Chair: Claudio Savaglio)**

4244 Sotirios-Foivos Pournaropoulos, Christos Antonopoulos and Spyros Lalas, "Supporting the Adaptive Deployment of Modular Applications in Cloud-Edge-Mobile Systems" (Regular)

6474 Matias Olmedo, Juan Andres Fraire, Renato Cherini, Fabio Patrone and Mario Marchese, "Routing in Scalable Delay-Tolerant Space Networks with Graph Neural Networks" (Short)

5473 Andreas Biri, Marco Zimmerling and Lothar Thiele, "Demos: Robust Orchestration for Autonomous Networking" (Regular)

13.00 - 14.00 LUNCH

14:00 -15:30 **Session V - Cloud, Edge and Resource Allocation - Part 2 (Chair: Francesco Pupo)**

763 Sukanya Jewsakul and Edith C.H. Ngai, "EmbientLoRa: Embedded Intelligence for Predictive Energy Harvesting and Management in LoRa Networks" (Short)

4588 Juan Paredes, Pau Ferrer-Cid, Jose Barcelo-Ordinas and Jorge Garcia-Vidal, "Black carbon proxy sensor model for air quality IoT monitoring networks" (Regular)

6247 Theodoros Aslanidis, Manos Koutsoubelias and Spyros Lalis, "Transparent Handover of Automated Drone Missions between Edge-based Control Stations" (Short)

5009 Haifeng Jia, Yichen Wei, Zhan Wang, Jiani Jin, Haorui Li and Yibo Pi, "Efficient Interference Graph Estimation via Concurrent Flooding" (Short)

*15.30-16.00 COFFEE BREAK**

16:00-18:00 Session VI - Security and Trust (Chair: Antonella Guzzo)

3221 Theo Gasteiger, Carlo Alberto Boano and Kay Römer, "BISON: Attacking Bluetooth's Broadcast Isochronous Streams" (Regular)

7084 Mikhail Fomichev, Timm Lippert and Matthias Hollick, "Hardening and Speeding Up Zero-interaction Pairing and Authentication" (Regular)

7106 Md Ashikul Haque and Abusayeed Saifullah, "A Game-Theoretic Approach for Mitigating Jamming Attacks in LPWAN" (Regular)

4065 Gulabi Mandal, Anik Roy, Ayantika Chatterjee and Soumyajit Dey, "Age of Information-Aware CACC for Vehicle Platooning" (WiP)

5251 Miguel Carvalhosa, David Rocha, João Almeida and Joaquim Ferreira, "Connected Solar Boat for C-ITS Applications" (WiP)

6281 Runbo Su and Amaury Saint-Jore, "A Role-based Trust Model assessing IoA services: First Results on Real MAS Implementation by using ROS 2" (WiP)

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Social Event

The **social dinner** will be held in the wonderful venue of the Villa Rendano in Cosenza.



19:00 Musical entertainment

19:45 Gala Dinner

21:30 Awards ceremony and presentation of EWSN'24

22:00 Cheers and Farewell