

23rd Mediterranean Communication and Computer Networking Conference

25 – 27 June 2025, Cagliari, Italy

Program

	Day 1: 25th June 2025	Day 2: 26th June 2025	Day 3: 27th June 2025
8:30 – 9:00	R1: Registration	R2: Registration	R3: Registration
9:00 – 9:30	W1: Welcome	W2: Welcome	W3: Welcome
9:30 – 10:30	K1: Keynote 1 <i>Marcello Caleffi</i> Quantum Internet: the Quest for a Paradigm Shift	K2: Keynote 2 <i>Suman Banerjee</i> Lightweight Edge AI for Sustainability, Public Safety, and More	K3: Keynote 3 <i>Giovanni Pau</i> Innovation Race: How Autonomous Racing Can Push Innovation
10:30 – 11:00	C1: Coffee break	C3: Coffee break	C5: Coffee break
11:00 – 11:45	S1: Session 1 AI and ML for Network Management	S4: Session 4 Green and Techno-Economic Perspectives	S7: Session 7 Advanced Radio Access and Resource Management
11:45 – 12:30	S2: Session 2 Smart Cities and Environmental Sensing	S5: Session 5 Special Topics in Networked Applications	S8: Session 8 Network Architecture and Cloud Continuum
12:30 – 14:00	L1: Lunch	L2: Lunch	L3: Lunch
14:00 – 15:00	S3: Session 3 Wireless Networking and Optimization	S6: Session 6 Security and Privacy in Networked Systems	W4: Farewell
15:00 – 16:00	C2: Coffee break	C4: Coffee break	
16:00 – 17:00	T1: Tutorial <i>Michele Nitti</i> The Trust Factor in IoT: How to Secure Your Smart World	IEEE YP Panel Careers for the Networks of Tomorrow: Insights from Young Professionals	
18:30 – 19:30	G1: Get together Mini Train Tour of Cagliari		
20:00 – 22:00	B1: Welcome Reception Palazzo Tirso Rooftop	B2: Social Dinner Ristorante Luigi Pomata	

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Day 1: 25th June 2025

8:30 – 9:00 – Registration

9:00 – 9:30 – Welcome

9:30 – 10:30 - Keynote - Quantum Internet: the Quest for a Paradigm Shift

Abstract: Internet just turned 50: five decades that shaped the world we live in. Indeed, the Internet itself evolved astonishingly since the beginning, from a network prototype consisting of a few static nodes in the early days to a leviathan interconnecting with billions of devices, half of the world's population. But what comes next, the so-called Quantum Internet, will be even more revolutionary. In fact, the Quantum Internet, aka a network enabling quantum communications among remote quantum nodes, can provide functionalities with no counterpart in the classical world, and these functionalities have the potential to fundamentally change our lives in ways we cannot imagine yet. The aim of the talk is to provide the participants with a wide view of quantum networks by highlighting the challenges and the opportunities connected to the design of the Quantum Internet, which requires a major network-paradigm shift and a multidisciplinary effort to harness the counter-intuitive marvels of quantum mechanics.



Biography: Marcello Caleffi co-leads the Quantum Internet research group at the University of Naples Federico II. His work appeared in top-tier IEEE Transactions and Journals, and he received multiple awards, including the IEEE Communications Society “Best Tutorial Paper Award” 2022 and the IEEE Communications Society “Award for Advances in Communication” 2024. Currently, he serves as editor for IEEE Trans. on Wireless Communications, IEEE Trans. on Communications, IEEE Trans. on Quantum Engineering, IEEE Open Journal of the Communications Society, and IEEE Internet Computing. In 2017, he has been appointed as a distinguished lecturer by the IEEE Computer Society, and in 2023, he has been appointed as a distinguished lecturer by the IEEE Communications Society.

10:30 – 11:00 – Coffee Break

11:00 – 11:45 – Session 1: AI and ML for Network Management

Chair: Alessandro Floris, University of Cagliari, Italy

- **LB-MDP-CL: A Reinforcement Learning and Co-Evolutionary Approach for Optimizing Responses in Multi-Step Cyberattacks**
Aws Jaber, Giordano Colo'
- **A Transformer-Based Modelling Approach for Robust QoE Estimation in Video Streaming**
MohammadAli Hamidi, Simone Porcu, Alessandro Floris, Luigi Atzori
- **LiblQ: Toward Real-Time Spectrum Classification in O-RAN dApps**
Filippo Olimpieri, Noemi Giustini, Andrea Lacava, Salvatore D'Oro, Tommaso Melodia, Francesca Cuomo



11:45 – 12:30 – Session 2: Smart Cities and Environmental Sensing

Chair: Nakazato Hidenori, Waseda University, Japan

- **Mobility-Integrated Sensor Networks for Smart Environmental Monitoring in Urban Ecosystems**
Santhosh Paramasivam, Ricardo Medda, Michele Losito, Devipriya N, Malathy S, Arnas Majumder, Amit Kumar, Gianluca Gatto
- **Assessing Fitness to Drive: An IoT-Based System Integrating Driver Emotions and Visual Distraction Metrics**
Manuel Andruccioli, Lucrezia Rettori, Kelvin Olaiya, Silvia Mirri, Roberto Girau
- **Testing and Configuring COTS Devices for CCAM Service Validation in Dual-Use Commercial Vehicles**
Angelo Kaceli, Benedetta Maurizio, Giovanni Serafini, Lucia Torlone, Yuri Stangherlin, Elena Cinque, Francesco Valentini, Marco Pratesi, Fortunato Santucci

12:30 – 14:00 – Lunch

14:00 – 15:00 – Session 3: Wireless Networking and Optimization

Chair: Fortunato Santucci, University of L'Aquila, Italy

- **Optimizing Relay Placement and Multi-Hop Routing for Smart Meter Networks**
Jocelyne Elias, Fabio Martignon, Andrea Pimpinella
- **Passive Detection of Fat Users in WiFi Networks Using Thompson Sampling**
Lorenz Pusch, Anatolij Zubow, Falko Dressler
- **On the Energy Consumption in IEEE 802.11be Multi-Link Operation**
Daniele Medda, Athanasios C. Iossifides, Periklis Chatzimisios
- **Static and Repeated Cooperative Games for the Optimization of the AoI in IoT Networks**
David Emanuele Corrado, Raphael Catania, Alessandro Buratto, Giovanni Perin

15:00 – 16:00 – Coffee Break

16:00 – 17:00 - Tutorial - The Trust Factor in IoT: How to Secure Your Smart World

Abstract: In the IoT ecosystem, trust goes beyond security—it is about ensuring the reliability and integrity of data exchanged between devices. This tutorial delves into the concept of trust in IoT, focusing on how to establish confidence in the accuracy and consistency of data, even in environments where devices and networks are constantly evolving. You'll learn how to implement strategies for trust management, ensure data provenance, and mitigate risks from faulty or compromised devices. The goals of this tutorial: illustrate the importance of trust in IoT scenarios and explain how it differs from and complements security, analyze behaviors and errors that undermine nodes reliability; Highlight current deficiencies in community-proposed trust models; discuss and test guidelines for developing a trust model, providing practical insights into crafting a model that evaluates the trustworthiness of IoT networks.



Biography: Michele Nitti is an Associate Professor at the University of Cagliari, Italy since 2015. He has been/is involved in the organization of several conferences: he has been Vertical and Topical Program Co-Chair for the IEEE WF-IoT 2022, General Chair for the IEEE IoT V&T Summit 2021 on Tourism, and Technical Program Co-Chair at the IEEE BMSB 2017. Currently, he is a member of the editorial board for the IEEE Internet of Things Journal, the Elsevier Computer Networks Journal and the MDPI IoT. Moreover, he is co-founder of an academic spin-off (GreenShare s.r.l.), which works in the mobility sector. He has been ranked in the "Top 2% World Ranking list of Scientists" for the years 2019-2023 and has received more than 4500 citations (source Google scholar).



Day 2: 26th June 2025

8:30 – 9:00 – Registration

9:00 – 9:30 – Welcome

9:30 – 10:30 - Keynote - Lightweight Edge AI for Sustainability, Public Safety, and More

Abstract: Edge computing provides a new way to implement services with many unique advantages. While many edge computing solutions have been implemented within different network infrastructures, in this talk, we will explore ways to design a lightweight edge computing platform which is robust and portable, leading to interesting applications and services in sustainability, public safety, and many more application domains.



Biography: Suman Banerjee is the David J. DeWitt Professor in Computer Sciences at UW-Madison, where he is the founding director of the WiNGS laboratory, which broadly focuses on research in wireless and mobile networking systems. He is the inaugural recipient of the ACM SIGMOBILE Rockstar award and a recipient of the NSF Career Award. He is a recipient of multiple award papers at various conferences, such as ACM MobiCom, ACM CoNEXT, and IEEE DySPAN. Further, technology developed by Prof. Banerjee has won various accolades, including the first prize at the Wisconsin Governor's Business Plan Competition in 2011 and in the Interdigital Innovation Challenge in 2012. He co-founded multiple startups, including StratusWorx (acquired by Ericsson in 2020) and OnTracMD (merged with MiCarePath in 2022). He served as the chair of ACM SIGMOBILE between 2013 and 2017. He is a fellow of the ACM and of the IEEE.

10:30 – 11:00 – Coffee Break

11:00 – 11:45 – Session 4: Green and Techno-Economic Perspectives

Chair: Marco Ajmone Marsan, IMDEA Networks Institute, Spain

- **A Techno-Economic View of the Future of Telecommunications**
Edoardo Meraviglia, Mattia Magnaghi, Antonio Capone, Nicola Blefari-Melazzi, Marta Valsecchi, Luca Dozio
- **A Data-Driven 'What-If' Analysis to Foster Mode Shift from Private to Public Transport Services**
Marco Garau, Luigi Atzori
- **Assessing the Benefits of Ground Vehicles as Moving Urban Base Stations**
Laura Finarelli, Falko Dressler, Marco G Ajmone Marsan, Gianluca Rizzo



11:45 – 12:30 – Session 5: Special Topics in Networked Applications

Chair: Carlos Gonzalez, IMT Atlantique Nantes, France

- **Exploiting LoRaWAN Downlinks for Covert Device-to-Device Communication**
Pietro Spadaccino, Pierluigi Locatelli, Francesca Cuomo
- **Architecture for Real-Time Interactive Music Performances**
Nicusor Amarie, Gianluca Fadda, Marian Alexandru, Maurizio Murrone, Vlad Popescu
- **RDMA Path Selection Using Lightweight Network Telemetry**
Tal Mizrahi, Shahar Belkar, Reuven Cohen

12:30 – 14:00 – Lunch

14:00 – 15:00 – Session 6: Security and Privacy in Networked Systems

Chair: Roberto Girau, University of Bologna, Italy

- **Preventing Data Integrity Breaches in IoT Applications Using Digital Twins**
Mohammed Ibrahim El-hajj
- **For Your Eyes Only: Bridging Privacy and Sensing in Wi-Fi Networks Through CSI Obfuscation**
Giovanni Angelo Alghisi, Francesco Gringoli, Marco Cominelli, Shabbir Raza, Renato Lo Cigno
- **Lightweight Hardware-Assisted Secure Collaborative Learning**
Wassila Lalouani

15:00 – 16:00 – Coffee Break

16:00 – 17:00 – IEEE Young Professionals Panel

Title: Careers for the Networks of Tomorrow: Insights from Young Professionals

Chair: Lucia Pintor, University of Cagliari, Italy



Francesca Marcello
Assistant Professor at the
University of Cagliari (Italy)



Edoardo Meraviglia
Researcher at the
Digital Innovation
Observatory of the
Polytechnic University of
Milan (Italy)



Alexey Rolich
Researcher at the
Sapienza University of
Rome (Italy)



Libin Mathew
Lecturer at South East
Technological University
(Ireland)



Day 3: 27th June 2025

8:30 – 9:00 – Registration

9:00 – 9:30 – Welcome

9:30 – 10:30 - Keynote - Innovation Race: How Autonomous Racing Can Push Innovation

Abstract: Autonomous racing provides a high-stakes, real-time environment that serves as a powerful testbed for advancing innovation in artificial intelligence (AI), control theory, and autonomous systems. Unlike conventional applications, racing scenarios demand split-second decision-making, robust perception, and adaptive control in the face of dynamic and uncertain conditions. These challenges push the boundaries of current technologies, driving the development of more efficient algorithms in areas such as reinforcement learning, sensor fusion, motion planning, and multi-agent coordination. Crucially, autonomous racing frameworks function as powerful stimuli to drive innovation. The pursuit of performance under shared rules and high visibility fosters a culture of engineering excellence and technological ambition, often leading to innovation leaps that extend far beyond racing itself—impacting domains such as robotics, transportation, aerospace, and defense. In this talk I will recollect the experience of leading the Technology Innovation Institute autonomous Racing Teams for drones and cars and how this experience has pushed us and the others in designing more robust, efficient and resilient algorithms.



Biography: Giovanni Pau is a Full Professor at the Department of Computer Science and Engineering (DISI) at the University of Bologna. He currently serves as Technical Director at the Technology Innovation Institute (TII) in Abu Dhabi, where he leads the Institute's efforts in autonomous racing. Additionally, he holds an appointment as Adjunct Faculty at the University of California, Los Angeles (UCLA). Previously he held the ATOS/Renault Smart Mobility Chair at Sorbonne Université in Paris. His work spans autonomous systems, vehicular networks, and mobile sensing technologies. He has developed large-scale experimental platforms, including vehicular and urban sensing testbeds at UCLA, and led the creation of the TII "Race Against the Machine" dataset—one of the first annotated drone racing datasets combining vision, inertial, and control data. In April 2025, Dr. Pau led the TII team to a historic win in the first-ever multi-drone autonomous race and secured second place in the single-drone lap-time race at the A2RL competition held in Abu Dhabi. He holds a Ph.D. in Computer Engineering from the University of Bologna and the Habilitation à diriger des recherches (HDR) from Sorbonne Université. With over 120 publications, his research has been widely cited and featured in major media including BBC, Wired, and The Guardian.

10:30 – 11:00 – Coffee Break

11:00 – 11:45 – Session 7: Advanced Radio Access and Resource Management

Chair: Zubow Anatolij, Technische Universität Berlin, Germany

- **Adaptive 5G Radio Access Strategies for Reliable Wireless Fronthaul**
Marcello Morini, Eugenio Moro, Ilario Filippini, Danilo De Donno, Salvatore Moscato, Antonio Capone
- **Dynamic Resource Allocation for Heterogeneous 5G TDD Wireless Networks: Balancing URLLC and eMBB Services**
Libin K Mathew
- **Understanding the Performance of Datalink for Avionic Communications**
Alberto Galassi, Roberto Valentini, Fortunato Santucci, Attilio Stefano Presutti, Antonio Serafini



11:00 – 11:45 – Session 8: Network Architecture and Cloud Continuum

Chair: Amit Kumar, University of Cagliari, Italy

- **CEI-Net: An Open-Source Framework for P4-Driven Network Management on the CEI Continuum**
Carlos Gonzalez, Salim Mahamat Charfadine
- **Network Container: Isolation Mechanism for Distribution Transparent Computing**
Hidenori Nakazato, Haruto Kobayashi
- **"Two-Stagification": Job Dispatching in Large-Scale Clusters via a Two-Stage Architecture**
Mert Yildiz, Alexey Rolich, Andrea Baiocchi

12:30 – 14:00 – Lunch

14:00 – 15:00 – Farewell

Social Events



Mini Train Tour of Cagliari

Departure: June 25th, 2025, 19:00

Meeting Point: Engineering Faculty, University of Cagliari, Via Marengo 2

Arrival: Piazza del Carmine, Cagliari

Discover Cagliari's historic charm aboard a scenic open-air mini train. Departing from the university campus, the tour winds through the city's iconic districts—Castello, Marina, Stampace, and Villanova—offering views of ancient bastions, narrow alleys, and the sea. The ride ends at Piazza del Carmine, just a short walk from the Welcome Reception.



Welcome Reception – Palazzo Tirso Rooftop

Time: June 25th, 2025, 20:00 – 20:30

Location: Palazzo Tirso MGallery Rooftop, Piazza Deffenu 4, Cagliari
Elegant welcome aperitif on the panoramic rooftop of Palazzo Tirso, a 5-star boutique hotel set in a beautifully restored historic building. This location offers views over Cagliari's port and skyline, creating the perfect setting for informal networking. Enjoy fine Sardinian wines and finger foods in a refined atmosphere.



Social Dinner – Ristorante Luigi Pomata

Time: June 26th, 2025, from 20:30

Location: Luigi Pomata Restaurant, Viale Regina Margherita 18, Cagliari

Conclude the evening with a gourmet dinner at Luigi Pomata, a landmark of Sardinian cuisine in Cagliari. Enjoy refined dishes inspired by island tradition, fresh seafood, and fine local wines.



Organizing Committee

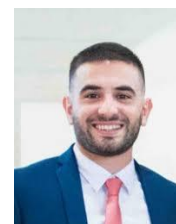
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