



# SMARTCOMP 2026

## *12th IEEE International Conference on Smart Computing*

Messina, Italy  
University of Messina  
22 - 25 June 2026



Università  
degli Studi  
di Messina

# Contents

- › Welcome from the General Chairs
- › Welcome from the TPC Chairs
- › Schedule — Main Conference & Workshops
- › Logistics & Directions (Venue, Getting to Messina, Social Events)
- › WiFi
- › Monday 22 June — PhD Forum & Workshops
- › Tuesday 23 June — Keynote (Prof. N. Roy), Sessions 1-3, One Minute Madness, Posters & Demos
- › Wednesday 24 June — Keynote (Prof. S. Banerjee), Sessions 4-5, Guided Tour, Social Dinner
- › Thursday 25 June — Panel, Sessions 6-7, TownHall, Concluding Remarks
- › Posters, Demos & Work-in-Progress Track
- › Organisation Committee
- › Technical Program Committee



# Welcome from the General Chairs

## *Message from the General Co-Chairs*

Welcome to the 12th IEEE International Conference on Smart Computing (SMARTCOMP 2026), held in Messina, Italy, from June 22 to June 25, 2026. SMARTCOMP continues to serve as a premier international forum for interactions among researchers in innovative research in smart computing. The conference encompasses areas such as the Internet of Things, Cyber-Physical Systems, Edge and Cloud computing, Data Analytics, Artificial Intelligence, and their applications to smart environments and services. The main conference program reflects the breadth and depth of the field, featuring high-quality research contributions selected through a rigorous review process.

The workshops and affiliated events represent an essential component of SMARTCOMP, providing focused venues for the discussion of emerging topics, early-stage research, and interdisciplinary perspectives in smart computing. These events complement the main conference by fostering interaction and collaboration within the community. SMARTCOMP 2026 is being held in Messina, a vibrant Mediterranean city located on the northeastern tip of Sicily, overlooking the Strait of Messina. The city has a rich history, stunning coastal landscapes, and a strong cultural heritage. Known as the “Gateway to Sicily,” it offers breathtaking views, historic landmarks, and a unique blend of tradition and innovation. We hope that attendees have the opportunity to explore its landmarks, including the Cathedral of Messina and its famous astronomical clock, and to enjoy the local cuisine and hospitality.

The technical program is enriched by distinguished keynote presentations. We gratefully acknowledge Suman Banerjee (University of Wisconsin-Madison) and Nirmalya Roy (University of Maryland, Baltimore County) for delivering inspiring keynote talks addressing current challenges and emerging directions in smart computing. A panel on ‘Intelligent Spaces’ will debate the current advances and anticipated impact of Generative and Agentic AI on Smart Computing. We are deeply grateful to the Program Co-Chairs, Daniela Nicklas and George Roussos, for their outstanding leadership in assembling a technically strong and well-balanced program. We also acknowledge the efforts of the Technical Program Committee members and external reviewers for their careful evaluations and constructive feedback.



The Industry Track, coordinated by Sunyanan Choochotkaew and Davide Giacalone, complements the research program by fostering interactions between academia and industry, and by highlighting practical challenges, system implementations, and real-world deployment experiences.

We sincerely thank the Workshop Co-Chairs Dirk Pesch and Francesca Righetti, as well as all workshop organizers, for assembling a diverse and high-quality program. We also acknowledge the contributions of the PhD Forum Co-Chairs Franca Delmastro and Simone Silvestri, and the Poster and Demo Co-Chairs Brent Lagesse and Mario Molinara, for creating engaging and interactive sessions. These events play a key role in strengthening the SMARTCOMP community by fostering collaboration and focused discussions.

We would like to thank all members of the organizing committee for their invaluable contributions. In particular, we acknowledge the work of the Publication Co-Chairs, Federico Montori and Carlo Puliafito, who managed the publication of the conference proceedings in a timely manner. We also thank the Publicity and Social Media Co-Chairs, Shameek Bhattacharjee, Debasree Das, and Haruki Yonekura, as well as the Web Chair, Enrico Catalfamo, for ensuring the visibility and dissemination of the conference. Finally, we extend our appreciation to the Finance Chair, Francesco Longo, for overseeing the financial management, and to the Local Chair, Fabrizio De Vita, for managing the local organization and logistics. SMARTCOMP 2026 is sponsored by the IEEE Computer Society Technical Community on Computer Communications (TCCC), the IEEE Computer Society Technical Community on Distributed Processing (TCDP), and the Missouri University of Science and Technology (USA). The conference is hosted by the University of Messina (Italy), whose support has been essential for the successful realization of the event. Finally, we thank the Steering Committee Chairs Giuseppe Anastasi, Jiannong Cao, and Sajal K. Das, for their continuous guidance and support throughout the organization of the conference.

We thank all authors, speakers, and participants whose contributions ensure the success of these activities, and we hope that SMARTCOMP 2026 will stimulate fruitful discussions, promote new collaborations, and contribute to advancing the state of the art in smart computing.

**SMARTCOMP 2026 General Co-Chairs**  
Dario Bruneo (*University of Messina, Italy*)  
Mohan Kumar (*Rochester Institute of Technology, USA*)



# Welcome from the TPC Chairs

Welcome to the 12th IEEE International Conference on Smart Computing (SMARTCOMP 2026). We are pleased to host this year's conference in Europe, in the city of Messina, Italy. As Technical Program Committee Chairs, we express our sincere appreciation to all those who contributed to the development of the technical program. In particular, we acknowledge the members of the Technical Program Committee, comprising 46 experts from 17 countries, whose diligence and professionalism ensured a rigorous and thorough review process. Their efforts have been instrumental in shaping a high-quality technical program and conference proceedings.

SMARTCOMP 2026 received a total of 60 research paper submissions. Following a comprehensive peer-review process, 21 papers were accepted for presentation, corresponding to an acceptance rate of 35%. Additionally, a number of submissions that could not be accommodated within the main research track were recommended for consideration in the co-located SMARTCOMP workshops and in other conference tracks, including posters and demonstrations.

We extend our appreciation to the General Chairs, Dario Bruneo and Mohan Kumar, for their leadership and continued support throughout the organization of the conference. We also thank the Steering Committee Chairs, Sajal K. Das, Giuseppe Anastasi, and Jiannong Cao, for their guidance and constructive input during the planning process.

Finally, we acknowledge the SMARTCOMP community for its continued commitment and the high quality of its contributions. We trust that SMARTCOMP 2026 will provide a valuable forum for the exchange of ideas and foster further collaboration within the community.

We look forward to a successful and engaging conference.

**SMARTCOMP 2026 TPC Co-Chairs**  
Daniela Nicklas (*University of Bamberg, Germany*)  
George Roussos (*Birkbeck, University of London, UK*)



# SCHEDULE

## SMARTCOMP 2026 - At a Glance

Monday 22 June	Tuesday 23 June	Wednesday 24 June	Thursday 25 June
<p>09:00 · Registration</p> <p>09:30 · Workshops Session 1</p> <p>11:00 · Coffee Break</p> <p>11:15 · Workshops Session 2</p> <p>13:00 · Lunch</p> <p>14:00 · Workshops Session 3</p> <p>18:00 · Guided tour of the Cathedral Crypt (Duomo)</p> <p>19:00 · Welcome Cocktail</p>	<p>08:30 · Registration</p> <p>09:00 · Conference Welcome</p> <p>09:30 · Keynote - Prof. N. Roy</p> <p>10:30 · Break</p> <p>11:00 · S1 - Smart Healthcare Systems &amp; Analytics</p> <p>12:30 · Lunch</p> <p>13:30 · S2 - Networks &amp; Systems Simulation</p> <p>14:15 · S3 - Industry Track</p> <p>15:00 · Break</p> <p>15:30 · PhD Forum: One Minute Madness</p> <p>16:00 · Poster &amp; Demo Session / PhD Forum</p>	<p>09:30 · Keynote Prof. S. Banerjee</p> <p>10:30 · Break</p> <p>11:00 · S4 - Best Paper Candidates</p> <p>12:30 · Lunch</p> <p>13:30 · S5 - Human-Centric Sensing &amp; Activity Recognition</p> <p>17:00 · Guided Tour</p> <p>20:00 · Social Dinner</p>	<p>09:30 · Panel</p> <p>10:30 · Break</p> <p>11:00 · S6 – ML for Edge Systems &amp; Security</p> <p>12:30 · Lunch</p> <p>13:30 · S7 – Smart Mobility &amp; Urban Systems</p> <p>15:00 · Break</p> <p>15:30 · TownHall Meeting</p> <p>16:00 · Concluding Remarks</p>

*All sessions take place at the central building of the University of Messina. The PhD Forum runs in parallel on Monday morning (09:30-14:00).*



# Workshop Schedule - Monday 22 June 2026

The workshops run *in parallel (synchronous)* and all start together following the common session structure: *Session 1 (09:30-11:00), Session 2 (11:15-13:00) and Session 3 (from 14:00)*. Each workshop ends when its programme of papers is complete, so the closing time varies between workshops. The windows below are taken from the current workshop programmes

Workshop	Programme window	Room
PhD Forum	09:30 - 14:00	Aula Commissioni
DM-SmartHealth (3rd ed.)	14:00 - 17:15	Aula Cannizzaro
LIFESEC (2nd ed.)	09:30 - 17:40	Aula 6
QCNS (1st ed.)	09:30 - 16:00	Aula 7
SmartAIDa (2nd ed.)	09:30 - 15:40	Aula 8
SmartAgr (5th ed.)	09:30 - 12:40	Aula 9
SmartSys (11th ed.)	09:30 - 15:45	Aula Magna
SSC (12th ed.)	09:30 - 15:45	Aula Silvestri
SMVG (1st ed.)	09:30 - 13:00	Aula Cannizzaro



# Logistics & Directions

## Venue

22 – 25 June 2026

University of Messina - Central Building

Piazza Pugliatti, 1 - 98122 Messina (ME), Italy

Both the workshops and the PhD Forum (Monday 22 June) and the three main conference days (Tuesday–Thursday, 23–25 June) take place at the central building of the University of Messina.



University of Messina - Central Building, Piazza Pugliatti 1, 98122 Messina



# Getting to Messina



## From Catania Airport (CTA)

Catania-Fontanarossa Airport (CTA) is the main international gateway to Messina and offers the most convenient connections.



### *By Bus (recommended)*

Direct coach services connect the airport to Messina city centre, making this the most convenient option for most travellers. Travel time is approximately 1.5-2 hours, with up to 36 daily departures (first bus at 06:55, last at 23:10), departing directly from the airport arrivals area and arriving at Messina Centrale / Piazza della Repubblica. Main operators include SAIS Autolinee (one-way tickets from €8.40), Interbus, FlixBus, and Itabus.



### *By Train*

Take the AMT Alibus shuttle from the airport to Catania Centrale (single ticket €4.00, valid 90 minutes), then a direct Trenitalia regional train to Messina Centrale (around 25 trains per day; fastest services about 1 hour 13 minutes). Total travel time is approximately 2.5-3 hours including the shuttle and waiting time.



### *By Taxi or Private Transfer*

Door-to-door, with no schedule constraints. Travel time is approximately 1-1.5 hours; pre-bookable through services such as Blacklane or Welcome Pickups.



## From Reggio Calabria Airport (REG)

Reggio Calabria Airport lies directly across the Strait of Messina.

Reach the port of Reggio Calabria by taxi or local bus, then cross to Messina by Liberty Lines hydrofoil ferry (about 18 daily sailings; crossing 30-35 minutes; tickets from approximately €3.50-€4.00).

Total travel time is approximately 1-1.5 hours.

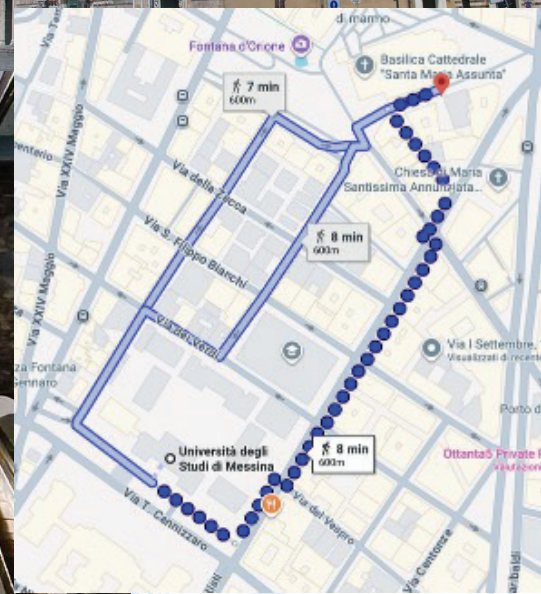
***For most international travellers, Catania Airport (CTA) is the preferred option due to its wider range of international flights and direct ground connections to Messina.***



# Welcome Cocktail

19:00, Monday 22 June 2026

'A Cucchiara - Strada S. Giacomo, 19 - 98122 Messina (ME)



'A Cucchiara, Strada S. Giacomo 19 - Approximately a 12 minute walk from the University



# Social Dinner

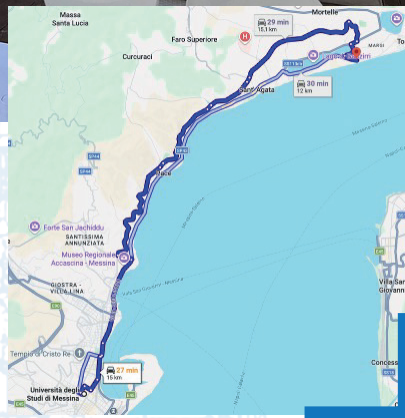
20:00, Wednesday 24 June 2026

Grecale - Via Circuito, 34, 98164 Torre Faro, Messina (ME)



**Sicilian and Japanese cuisine overlooking the Strait of Messina**  
**grecalesristorante.com • Tel: +39 090 6402915**

*Approximately 20 min by car from the University  
(Bus service is provided by the conference)*



# WiFi



## SMARTCOMP 2026 - WiFi

Internet access is provided via Eduroam. If your institution participates in Eduroam, you can connect using your usual academic credentials. Participants without Eduroam access will be given guest network credentials during on-site registration.

WebPub (proceedings) – internal

The WebPub site for SMARTCOMP 2026 can be accessed at the link below.

- Link: [inserire link]
- Username: [inserire]
- Password: [inserire]



# 1st Day - Monday 22 June

## PhD Forum

Co-Chairs: Franca Delmastro (CNR, Italy); Simone Silvestri (University of Kentucky, USA)

### Programme

- 09:30 - 10:30 · *Talk*
- 10:30 - 11:00 · *Student Presentations*
- 11:00 - 11:15 · *Coffee Break*
- 11:15 - 13:00 · *Student Presentations*
- 13:00 - 14:00 · *Mentoring Lunch*

### Instructions for Participants

PhD Forum participants will need to prepare: a poster; a single slide for the One Minute Madness (to be sent to the organizers by June 15th); and a slide to present their poster during the PhD Forum. A printed version of the poster should be brought to the conference. Monday's student presentations are 10 minutes + 5 minutes for Q&A. The presentation should consist of at most 3 slides and represent the content of the poster.

### Accepted Contributions

- **Towards a Lightweight Foundation Model for Smart-Home Sensor Data**  
*Michele Fiori (University of Milan, Italy)*
- **Learning Adaptive Adversarial Attacks for Medical AI via Reinforcement Learning**  
*Manuel Fabiano (University of Messina, Italy)*
- **Zero-Shot Cross-Domain Forecasting of Load and Thermal Dynamics in Residential Setting**  
*Jainam J. Dhruva (University of Kentucky, USA)*
- **From Incremental Learning to Federated Distillation: Continual and Privacy-Preserving Intelligence at the Edge**  
*Ilenia Ficili (University of Messina, Italy)*
- **Trust and Trustworthiness-Aware Congestion Reduction of Drivers of Ground Vehicles with Dynamic, Heterogeneous Autonomy**  
*Doris E M Brown (Missouri University of Science and Technology, USA)*
- **Toward FPGA Virtualization on the Compute Continuum**  
*Vincenzo Alessio Bucaria (University of Messina, Italy)*
- **Deployable Microtransit Routing: Embedding Operational Constraints in the Pickup and Delivery Problem with Time Windows**  
*Agrima Khanna (Vanderbilt University, USA)*
- **Talk to Your Agent: LLM-Based Trajectory Grounding and Behavioral Correction in RL**  
*Gaetano Pio Pispisa (University of Messina, Italy)*
- **BioDevOps: Toward a Formal Framework for Continuous Deployment in Safety-Critical Medical Devices**  
*Fabio Orazio Mirto (University of Messina, Italy)*



# Workshops

The workshops take place on Monday 22 June at the central building of the University of Messina. They run in parallel (synchronous) and all start together following the common session structure - Session 1 (09:30-11:00), Session 2 (11:15-13:00) and Session 3 (from 14:00) - each ending when its own programme of papers is complete.

The programmes below are the current versions and may still be refined.

## Second International Workshop on Whole-Lifecycle Security for Smart Systems: Methods and Tools (LIFESEC) - 2nd ed.

**General Co-Chairs:** *Robert Seidl (Nokia Bell Labs); Christian Banse (Fraunhofer AISEC); Georgios Xilouris (NCSR "Demokritos"); Erol Gelenbe (Institute of Theoretical and Applied Informatics, Polish Academy of Sciences)*

Website: [telemetry-project.eu/ieee-smartcomp-2026](http://telemetry-project.eu/ieee-smartcomp-2026)

### **09:00 Registration**

#### **Session 1 • 09:30 • Chair: Robert Seidl**

**09:30 - 09:40 • Workshop Introduction**

**09:40 - 10:20 • Automated Distributed Ledger Infrastructure for Continuous Cybersecurity Certification in Multi-Stakeholder Environments**

*Álvaro Navarro Martínez, Sara Nieves Matheu García, Antonio Fernando Skarmeta Gómez • Presenter: Álvaro Navarro*

**10:20 - 11:00 • Deployment-Aware Parameter Optimization for IoT Attack Detection**

*Mohammed Nasereddin, Erol Gelenbe • Presenter: Mohammed Nasereddin*

**11:00 • Coffee Break**

#### **Session 2 • 11:15 • Chair: Robert Seidl**

**11:15 - 12:15 • Cross-Domain Convolutional Autoencoder-Based Anomaly Detection for Whole-Lifecycle Security of Cyber-Physical Systems**

*Diego Argüello Ron, Armando Aguayo Mendoza, Oscar Garcia Perales • Presenter: Armando Aguayo*

**12:15 - 12:55 • Context Matters: Vulnerability Categorization with Dual-Input Code Representations**

*Anna Maria Voukopoulou, Ilias Kalouptsoglou, Dionysios Kehagias, Dimitrios Tzouvaras • Presenter: Anna Maria Voukopoulou*

**13:00 • Lunch**



**Session 3 · 14:00 · Chair: Robert Seidl**

**14:00 - 14:40 · On feasibility of network based firmware change detection**

*Joerg Abendroth, Martin G. Jaatun, Manuel Leone, Egil ... · Presenter: Joerg Abendroth*

**14:40 - 15:20 · An Heuristic and Explainable Unsupervised Concept Drift Detector**

*Gabriele Nicolò Costa, Alessandra De Paola, Salvatore Drago, Pierluca Ferraro, Giuseppe Lo Re · Presenter: Gabriele Nicolò Costa*

**15:20 - 16:20 · Interactive session – “Tools and Techniques for Whole-Lifecycle Security”:  
introducing and demonstrating tools and use cases, gathering feedback from the audience**

*Presenter: Jens Kuhr*

**16:20 - 17:00 · 5G/6G Network Digital Twin-based cyber defense framework for threat  
detection and classification**

*Ioannis Vasalos, Efstathios Zaragkas, Athina Vekraki, Maria Christopoulou, Michail Alexandros  
Kourtis, George Xilouris, Nikos Dimitriou · Presenter: Ioannis Vasalos*

**17:00 - 17:40 · Automatic Association of Cloud Security Controls and Quantifiable Metrics  
for Certification**

*John Bianchi, Luca Petrillo, Shuya Dong, Marinella Petrocchi · Presenter: John Bianchi*

## First International Workshop on Quantum Computing and Networking for Smart Systems (QCNS) - 1st ed.

**General Co-Chairs:** *Claudio Cicconetti (CNR-IIT); Sara Marzella (CINECA, Italy); Mansur Ziatdinov  
(University of Messina, Italy); Luciano Lenzini (University of Pisa, Italy)*

Website: [qcns.iit.cnr.it](http://qcns.iit.cnr.it)

### **09:00 Registration**

**Session #1 · 09:30 - 11:00 · Chair: Claudio Cicconetti (CNR, Italy)**

*Welcome and introduction*

**Keynote - Analog Quantum Computing in Practice: Graph Optimization for Telco and the  
Road to Digital Machines**

*Giacomo Vitali (LINKS Foundation, Italy)*

**Solving Currency Arbitrage Problems using D-Wave Advantage2 Quantum Annealer**

*Lorenzo Mazzei, Giada Beccari, Mirko Laruina, Marco Cococcioni (University of Pisa, Italy)*

**11:00 - 11:30 · Coffee break**



**Session #2 · 11:30 – 13:00 · Chair: Mansur Ziatdinov (University of Messina, Italy)**

**Explainable Quantum Machine Learning for IoMT Security: Evaluating Quantum Advantage**  
*Vincenzo Spadari, Alfredo Nascita (University of Napoli Federico II, Italy); Idio Guarino (University of Bologna, Italy); Domenico Ciunzio, Antonio Pescapé (University of Naples Federico II, Italy)*

**Assessing the Feasibility of Quantum Autoencoders for Real-World Visual Anomaly Detection**

*Farida Farsian (INAF-Osservatorio Astrofisico di Catania); Attilio Azzarelli, Fabrizio De Vita (University of Messina, Italy); Giovanni Merlino (University of Messina & CINI, Italy); Francesco Schilliro (INAF-Osservatorio Astrofisico di Catania, Italy)*

**Federated Variational Quantum Neural Networks for Privacy-Preserving Anomaly Detection in Smart IoT Networks**

*Radhakrishnan Delhibabu (VIT Vellore, India); Manuel Mazzara (Innopolis University, Russia); Salvatore Distefano (University of Kazan, Italy)*

**A Recipe for Data-driven Medicine: Data Encoding, Machine Learning, and Quantum Computing**

*Mansur Ziatdinov (University of Messina, Italy); Salvatore Distefano (University of Kazan, Italy)*

**13:00 – 14:00 Lunch**

**Session #3 · 14:00 – 16:00 · Chair: M. Arif Khan (Charles Sturt University, Australia)**

**Invited talk - Towards Quantum Networks: Characterizing Raman Noise over Metropolitan-scale Fiber Network**

*Marcello Caleffi, Laura d'Avossa, Italo Ignacio Machuca Flores, Marco Grillo, Elena Montella, Angela Sara Cacciapuoti (University of Naples Federico II, Italy)*

**Traveling Salesman Problem with a preprocessing method for classical and quantum optimization**

*Alessia Ciacco (University of Calabria, Italy); Luigi Di Puglia Pugliese (ICAR-CNR, Italy); Francesca Guerriero (University of Calabria, Italy)*

**QAIRAS: A Resource-Bounded Hybrid Quantum-Inspired Architecture for Secure Smart Systems**

*Patrick Hamilton, M. Arif Khan, Rafiqul Islam (Charles Sturt University, Australia); Fendy Santoso (AI and Cyber Futures Institute, Charles Sturt University, Australia)*



**Integrating Classical and Quantum PUF with QKD for Secure IoT Networks**  
*Franco Cirillo, Maria Caterina D'Aloia, Christian Esposito (University of Salerno, Italy)*

**Quantum k-means based on Quantum Local Sensitive Hashing with Application to Irrigation Machine Sensors Data Clustering**  
*Kamil Khadiev, Aliia Khadieva (Kazan Federal University, Russia)*

**Q2NS Demo: A Quantum Network Simulator Based on ns-3**  
*Francesco Mazza, Adam Pearson, Marcello Caleffi, Angela Sara Cacciapuoti (University of Naples Federico II, Italy)*

**Concluding remarks**

## Second International Workshop on Smart AI Models and Data Sharing and Monetisation (SmartAIDa) - 2nd ed.

**General Co-Chairs:** *Andrea Visentin (University College Cork, Ireland); Martin Serrano (University of Galway, Ireland & Insight SFI Research Centre); Edward Curry (University of Galway, Ireland)*

Website: [cs.ucc.ie/smartaidda](http://cs.ucc.ie/smartaidda)

**09:30 - 09:45 · Workshop Opening - Welcome from the Chairs**

**09:45 - 11:00 · Keynote - Engineering the Smart City Data Continuum: Data Spaces, Digital Twins and AI-Driven Decision Intelligence**  
*Dr. Antonio J. Jara*

**11:00 - 11:15 · Coffee Break**

**Session 1 · Trustworthy AI, Federated Learning and Data Value – Chair: Martin Serrano**

**11:15 - 11:40 · Policy-Driven Federated Learning: Operationalising Governance, Trust, and Compliance in Cross-Organisational AI**  
*T. Ranathunga; S. Bharti; A. McGibney*

**11:40 - 12:05 · Sparse-BP: Efficient On-Device Backpropagation for Resource-Constrained Systems**  
*R. M. A. Nawaiseh; E. Catalfamo; F. De Vita*



12:05 - 12:30 · A Balanced-Scorecard-Aligned Mapping for Data Valuation Metrics

*E. Vyhmeister; U. Bub; R. Schneider; A. Visentin*

**13:00 - 14:00 · Lunch Break**

**Session 2 · Distributed Intelligence and AI Applications – Chair: Antonio J. Jara**

14:00 - 14:25 · Improving Authenticity of x402 Payment Protocol through Verification of Agent's Intention with Zero-Knowledge Proof

*S. Thakur; M. Serrano*

14:25 - 14:50 · Semantically Enriching Investor Micro-blogs for Opinion-Aware Emotion Analysis: A Practical Approach

*G. Negi; O. Zayed; M. Serrano; P. Buitelaar*

14:50 - 15:15 · Multimodal AI-driven Multi-Source Remote Sensing Framework for Sustainable Paludiculture Monitoring

*S. H. Alsamhi; F. Renou-Wilson; K. Byrne; N. O'Brolchain; M. Serrano; F. Nashwan; E. Curry*

15:15 - 15:40 · FedLLM-Align: Feature Extraction From Heterogeneous Clients

*A. Gaber; M. A. El-Mahdy; Y. A. Abuzied; H. M. A. Eltawab; T. ElBatt*

## Fifth International Workshop on Smart Agriculture (SmartAgr) - 5th ed.

**General Co-Chairs:** *Anna Lina Ruscelli (Scuola Superiore Sant'Anna, Pisa, Italy); Gabriele Cecchetti (Scuola Superiore Sant'Anna, Pisa, Italy); Asiya Khan (University of Plymouth, UK); Nagham Saeed (University of West London, UK)*

Website: [smartagr.santannapisa.it](http://smartagr.santannapisa.it)

**09:00 · Registration**

09:30 - 09:40 Welcome from the Chairs – *Gabriele Cecchetti (Scuola Superiore Sant'Anna)*

**Session 1 · 09:40 - 11:00 · “Exploring Artificial Intelligence applications in Smart Agriculture” – Chair: Gabriele Cecchetti**

09:40 - 10:00 · Benchmarking Object Detection Models for Tuta Absoluta Egg Identification in Field Images

*Georgios Katranas, Isaak Kavasidis, Zisis Tsiropoulos, Ioannis Gravalos (University of Thessaly, Greece)*



**10:00 - 10:20 · An AI-driven Digital Twin Methodology to Optimize Irrigation in Greenhouses**  
*Ilenia Ficili, Maurizio Giacobbe, Giuseppe Tricomi, Antonio Puliafito (University of Messina, Italy)*

**10:20 - 10:40 · PesTwin: a biology-informed Digital Twin for enabling precision farming**  
*Andrea De Antoni (University of Trento & Biocentis s.r.l., Italy); Matteo Rucco (Biocentis s.r.l., Italy); Alberto Maria Cattaneo, Maria Vittoria Mancini (University of Pavia, Italy); Paola Draicchio (Fondazione Fojanini di Studi Superiori, Italy); Giovanni Iacca, Andrea Pugliese (University of Trento, Italy)*

**10:40 - 11:00 · Evaluating Weak Supervision for Grapevine Segmentation in UAV-based RGB Imager**  
*Danilo Leite, Pedro Marques, Luis Padua, Joaquim João Sousa, Raul Morais (University of Trás-os-Montes e Alto Douro, Portugal); António Cunha (UTAD & INESC TEC, Portugal)*

**11:00 · Coffee break**

**Session 2 · 11:20 - 12:40 · “Advanced ICT for Smart Agriculture” – Chairs: Luis Padua (UTAD, Portugal) & Asiya Khan (University of Plymouth, United Kingdom)**

**11:20 - 11:40 · Smart Agrivoltaics for Precision Agriculture: A Sustainable Simulation-Driven Architecture**  
*Gabriele Cecchetti, Anna Lina Ruscelli, Piero Castoldi (Scuola Superiore Sant’Anna, Italy)*

**11:40 - 12:00 · Photovoltaic vs National Grid Energy in Controlled Environment Agriculture (CEA) for Enhanced WEFE Nexus: A Jordanian Case Study**  
*Tetiana Buzykina, Asiya Khan (University of Plymouth, UK); Omar Bawab, Husam HajAli, Mohammad Mashatleh (Royal Scientific Society, Jordan); Nagham Saeed (University of West London, UK)*

**12:00 - 12:20 · A Data Governance Framework for Socio-Ecological Value in Smart Agriculture**  
*Saeed Niksaz, Fisnik Dalipi (Linnaeus University, Sweden); Avni Rustemi (State University of Tetovo, North Macedonia)*

**12:20 - 12:40 · WISDOM: Water and energy efficient Irrigation using Smart Drone-Orchestrated Microservic...**  
*Abhishek Pandey, Sourav Kanti Addya (National Institute of Technology Karnataka, India)*

**12:40 · Workshop Conclusions - Asiya Khan (University of Plymouth, UK)**



# Eleventh Workshop on Smart Service Systems (SmartSys) - 11th ed.

**General Co-Chairs:** *Nirmalya Roy (University of Maryland, Baltimore County, USA); Carlo Vallati (University of Pisa, Italy); Gurdip Singh (George Mason University, USA)*

Website: [smartsys2026.dii.unipi.it](http://smartsys2026.dii.unipi.it)

## **Session 1 • 09:30 - 11:00 • Introduction and Keynote - Chair: Marco Pettorali**

**Keynote – Enabling Physical AI for Resilient Community Infrastructure**

*Prof. Nalini Venkatasubramanian (Dept. of Computer Science, University of California, Irvine, USA)*

## **11:00 - 11:15 • Coffee Break**

## **Session 2 • 11:15 - 13:00 • IoT Session - Chair: Flavio De Paoli**

**Enabling the Cloud-to-Autonomous-Vehicles continuum for future Industrial IoT Applications: the CAVIA approach**

*Gianluca Filippone (Gran Sasso Science Institute, Italy); Francesca Righetti (Pegaso University, Italy); Francesco Di Rienzo, Carlo Vallati (University of Pisa, Italy); Marco Autili (University of L'Aquila, Italy); Alberto Ceselli, Christian Quadri (University of Milan, Italy)*

**Toward a Distributed Hypervisor for I/O Virtualization in the Cloud-to-Things Compute Continuum**

*Giovanni Lombardo, Antonio Puliafito, Francesco Longo (University of Messina, Italy); Giovanni Merlino (University of Messina & CINI, Italy)*

**Toward Deviceless Paradigm: An IoT-centered and Orchestrated FaaS Architecture**

*Fabio Orazio Mirto, Luca D'Agati, Giuseppe Tricomi, Francesco Longo (University of Messina, Italy); Carlo Puliafito, Antonio Viridis (University of Pisa, Italy); Giovanni Merlino (University of Messina & CINI, Italy)*

**Automated Litter Characterization for Smart Cities**

*Emily Diaz-Silva, Grace Gao, Nidhi Begur, Sandina Charles, Rishith Arra, Suvosree Chatterjee, Mahdi Zarif, Jason O. Hallstrom (Florida Atlantic University, USA)*

## **13:00 - 14:00 • Lunch Break**

## **Session 3 • 14:00 - 15:45 • AI and Cybersecurity Session - Chair: Carlo Vallati**

**Information-Extraction-Guided LLM Generation of WoT Thing Descriptions for Services**

*Lara Sormani, Flavio DePaoli (University of Milano-Bicocca, Italy); Giuseppe Vizzari (University ... , Italy)*



## **PLAIground: SLO-Driven Runtime Model Selection for Compound AI Systems in the Edge-Cloud-Space Continuum**

*Milos Gravara, Andrija Stanisic, Cynthia Marcelino, Stefan Nastic (TU Wien, Austria)*

## **Secure and Dependable UAV through Rejuvenation**

*Salvatore Distefano (University of Kazan, Italy); Maurizio Giacobbe, Marco Scarpa (University of Messina, Italy)*

## **Towards neurosymbolic network intrusion detection**

*Vito Scaraggi, Andrea Passarella, Marco Conti (IIT-CNR, Italy)*

# **Twelfth Workshop on Sensors and Smart Cities (SSC) - 12th ed.**

**General Chair:** *Antonio Puliafito (University of Messina, Italy)*

**Website:** [portale2.unime.it/ssc2026/](http://portale2.unime.it/ssc2026/)

### **09:00 - 09:30 • Registration**

**Technical Session 1 • 09:30 - 11:00 • Chair:** *Antonio Puliafito*

**Keynote - From Smart City to Intelligent City: the SmartMe.io experience**

*Francesco Alessi (SmartMe.io s.r.l., Italy)*

**PROAIR: A Digital Twin Framework for Urban Air Quality Forecasting via Temporal Fusion Transformers and Scenario-based What-if Analysis**

*Mario Molinara, Marco Cantone, Ciro Russo, Alessandro Bria, Claudio Marrocco (University of Cassino and Southern Lazio, Italy); Simone De Vita, Michelangelo Esposito, Giovanni D'Acunto, Claudio Pagano, Gaetano Rocco (I.T.Svil s.r.l., Italy)*

**Edge-Based PPE Detection for Urban Construction Under Realistic Visual Conditions**

*Giustino Claudio Miglionico, Francesco Di Rienzo, Pietro Ducange, Francesco Marcelloni, Carlo Vallati (University of Pisa, Italy)*

**Dynamic Cluster-Head Rotation for Energy-Aware Predictive Wireless Sensor Networks**

*Imourane Abdoulaye, Laurent Yvon Rodriguez (Université Côte d'Azur, LEAT, CNRS, France); Dorian Diana (Université Côte d'Azur & LEAT, France); Cécile Belleudy, Benoit Miramond (Université Côte d'Azur, France)*

### **11:00 - 11:15 • Coffee Break**



**Workshops**  
Technical Session 2 · 11:15 – 13:00 · Chair: Fabrizio De Vita

**Context-Aware Recommendation for Smart Tourism: A Framework for Enhancing Archaeological Park Experiences**

*Francesco Colace, Marco Lombardi, Domenico Santaniello, Pietro Giuseppe Strollo, Carmine Valentino (University of Salerno, Italy); Angelo Lorusso (Pegaso University & University of Salerno, Italy)*

**Detecting Cyber-Attacks in Connected Vehicles through Context-Aware Multilevel Graph Modeling**

*Mario Casillo, Francesco Colace, Domenico Santaniello, Giusy Strollo, Carmine Valentino (University of Salerno, Italy); Angelo Lorusso (Pegaso University & University of Salerno, Italy)*

**An IoT-Driven Machine Learning Framework for Real-Time Monitoring in Smart Buildings**

*Mostafa Zaman, Sujay Saha, Gayatri Bhavana Addala, Sherif Abdelwahed (Virginia Commonwealth University, USA); Nasibeh Zohrabi (Pennsylvania State University Brandywine, USA)*

**Energy-Aware Multi-Objective Resource Allocation of Real-Time Mobile Applications in the Cloud-to-Things Continuum**

*Marco Pettorali, Lorenzo Moni, Giuseppe Anastasi (University of Pisa, Italy); Francesca Righetti (Pegaso University, Italy)*

**13:00 – 14:00 Lunch**

Technical Session 3 · 14:00 – 15:45 · Chair: Giuseppe Tricomi

**Neuro-Symbolic AI for Industrial Systems: Bridging Deep Learning and Domain Expertise**

*Ghena Barakat, Francesco Longo, Antonio Puliafito (University of Messina, Italy); Harshit Gupta (Indian Institute of Technology, India); Giovanni Merlino (University of Messina & CINI, Italy)*

**When Seconds Matter - Designing Sensor-driven Emergency Services for Smart Cities**

*Spyridon Georg Koustas, Angela Roth (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany); Timon Sengewald (Rosenheim Technical University of Applied Sciences, Germany)*

**Towards a Zero-Touch Provisioning Approach for Heterogeneous Edge Platforms using UEFI and iPXE Boot**

*Theo Manea, Laurent Corbain, Jerome Venant (Thales cortAix Labs, France); Zakaria Benomar (Thales Research and Technology, France); Anatole Phamnguyen (Thales cortAix, France); Alexandre Berne (Université Paris-Saclay, France)*

**Optimizing LoRaWAN Coverage for IoTaaS in Dense Urban Scenario through Validation-Based Radio Planning**

*Maurizio Giacobbe, Sarah Zanafi, Antonio Puliafito (University of Messina, Italy)*



# S-CI: An Agent-Based AI Framework for Strategic Competitive Intelligence in the Geoeconomic Age

*Andrea Puliafito (Italy)*

## Workshop on Smart Moving (SMVG) - 1st ed.

**General Co-Chairs:** *Marco Furini (University of Modena and Reggio Emilia, Italy); Manuela Montangero (University of Modena and Reggio Emilia, Italy); Giovanni Delnevo (University of Bologna, Italy)*

Website: [sites.google.com/view/smvg26/home](https://sites.google.com/view/smvg26/home)

**09:30 - 09:40 · Workshop Welcome**

**First Session · 09:40 - 11:00 · Chair: Manuel Andruccioli**

**Prioritizing Policy Instruments for Accelerating Sustainable Electric Vehicle Adoption Using Fuzzy Decision-Making**

*Sina Shaffiee Haghshenas, Raffaele Zinno, Giuseppe Guido, Sami Shaffiee Haghshenas, Gregorio Cappuccino (University of Calabria, Italy)*

**Exploring Geospatial Features for Short-Term Energy Forecasting in EBus with Machine Learning**

*Manuel Andruccioli, Giovanni Delnevo, Silvia Mirri (University of Bologna, Italy); Bryce Chao, Hugo Badia, Miquel Estrada (Universitat Politècnica de Catalunya, Spain)*

**Zero-Trust Secure Network Slicing for Autonomous Vehicle Platooning**

*Quazi Ehsanul Kabir Mamun (Charles Sturt University, Australia); Marco Picone (University of Modena and Reggio Emilia, Italy)*

**Optimized Collective Perception Service for Vehicular Networks**

*Thenuka Karunathilake, Anna Förster (ComNets, University of Bremen, Germany)*

**11:00 - 11:15 Coffee Break**

**Second Session · 11:15 - 13:00 · Chair: Manuel Andruccioli**

**Short-Term Fuel Forecasting in Urban Bus Fleets: A Data-Driven Approach for Transport Operations**

*Manuel Andruccioli, Giovanni Delnevo, Silvia Mirri (University of Bologna, Italy); Miquel Estrada (Universitat Politècnica de Catalunya, Spain)*

**IoV-FedMBD: Privacy-Preserving Federated Detection of Message Manipulation in the Internet of Vehicles**

*Quazi Ehsanul Kabir Mamun (Charles Sturt University, Australia); Ashish Patel, Gaurav Ameta (Parul University, India)*



## **A Semantic Digital Twin for Occlusion-Aware Cooperative Collision Prediction**

*Malik Luti, Zixia Xia, Marco Levorato (University of California, Irvine, USA); Daniel Solc, Matúš Dopiriak, Juraj Gazda (Technical University of Košice, Slovakia)*

## **Quadruped Robots in Smart Mobility Systems: Applications, Challenges, and Integration Gaps**

*Kelvin Olaiya, Eugenio Tampieri, Manuel Andruccioli, Giovanni Delnevo, Paola Salomoni (University of Bologna, Italy); Chan-Tong Lam (Macao Polytechnic University, Macao); Giovanni Pau (UCLA - TII, Italy & University of Bologna, Italy)*

# **Third International Workshop on Digital and Mobile Smart Health Systems (DM-SmartHealth) - 3rd ed.**

**General Co-Chairs:** *Mattia Giovanni Campana (National Research Council of Italy, Italy); Nikil Dutt (University of California, Irvine, USA); John Templeton (University of South Florida, USA)*

Website: [dm-smarthealth2026.iit.cnr.it](http://dm-smarthealth2026.iit.cnr.it)

**14:00 - 14:10 · Welcome from the Chairs**

**Session 1 · 14:10 - 15:55 · Sensing, Monitoring and Clinical AI - Chair: Mattia Campana**

**14:10 - 14:45 · A Machine Learning Approach for Sleep Apnea Detection Using Unobtrusive In-Bed Sensors**

*Eleonora Melissa (Institute of Clinical Physiology, CNR, Italy); Carlotta Marinai, Lucia Arcarisi and Francesco Bossi (University of Pisa, Italy); Pasquale Bufano (CNR, Italy); Francesco Di Rienzo and Gianluca Rho (University of Pisa, Italy); Michele Zanoletti (Institute of Clinical Physiology, CNR, Italy); Alberto Greco, Carlo Vallati and Nicola Carbonaro (University of Pisa, Italy); Marco Laurino (CNR, Italy); Alessandro Tognetti (University of Pisa, Italy)*

**14:45 - 15:20 Robust Wearable Stress Detection using Physiological Feature Engineering and Subject-Independent Evaluation**

*Paul Ben O'brien, Malik Muhammad Qirtas and Andrea Visentin (University College Cork, Ireland)*

**15:20 - 15:55 CLICK-SAM: A CLinical Interactive Click-based Kit for Digital Breast Tomosynthesis Segmentation**

*Giada Anastasi, Giulio Del Corso, Michela Franchini, Sabrina Molinaro and Stefania Pieroni (CNR, Italy)*



**Session 2 · 16:05 – 17:15 · Foundation Models and Large Language Models for Healthcare  
– Chair: John Templeton**

**16:05 – 16:40 · Multimodal-to-Semantics Large Language Model Framework for Loneliness Assessment**

*Chenxin Chen and Iman Azimi (University of Turku, Finland); Amir M. Rahmani (University of California, Irvine, USA); Pasi Liljeberg (University of Turku, Finland)*

**16:40 – 17:1 · RamanLLM: Reprogramming Frozen Large Language Models for Raman Spectral Analysis**

*Álvaro García (University College Cork, Ireland); Simone Innocente (Tyndall National Institute, Ireland); Nicola Rossberg, Malik Muhammad Qirtas and Andrea Visentin (University College Cork, Ireland)*



# 2nd Day - Tuesday 23 June

## Keynote - Prof. Nirmalya Roy

09:30 - 10:30



### **Building Resilient Edge Intelligence for Autonomous Search and Rescue Robotics**

*In this talk, Prof. Roy will present research from his group over the past several years on the design, implementation, and validation of robust machine learning models for autonomous robotic systems supporting search and rescue operations in disaster-prone environments. He will begin by introducing a collaborative federated learning framework for resource-constrained IoT devices and robotic platforms that enables distributed training and intelligent decision-making in infrastructure-limited scenarios. He will then discuss a camera-based physiological sensing system that leverages multi-task learning, self-supervised learning, generative adversarial learning, and vision-language models to monitor the vital signs of victims. He will also present a view-invariant machine learning framework based on Novel Class Discovery for human action recognition in post-disaster environments, as well as research on on-device semantic segmentation, autonomous navigation through novel reinforcement learning approaches, and human-machine teaming methods designed to reduce operator cognitive load. Finally, he will showcase demonstrations, deployments, and field experiments conducted using the DoD MAGNUS and NSF TRACE Test Beds at UMBC.*



## Speaker Profile

*Nirmalya Roy is a Professor in the Information Systems Department at the University of Maryland, Baltimore County (UMBC), where he leads the Mobile, Pervasive, and Sensor Computing (MPSC) Lab. He also serves as Director of the Center for Research in Use-Inspired Cyber-Physical Systems (CYPRESS) and Associate Director of the Center for Real-time Distributed Sensing and Autonomy (CARDS) at UMBC. He leads several major research initiatives, including the DoD-funded MAGNUS and the NSF-funded AI-Ready TRACE testbeds. His research focuses on applied artificial intelligence and machine learning with applications in smart health, cyber-physical systems, the Internet of Things, robotics, and autonomous systems, and has been recognised through numerous best paper awards, including IEEE/ACM DCOSS-IoT (2023), SmartComp (2023, 2022), SPIE (2022), CHASE (2021), IGSC (2020), Elsevier PMC (2020), QShine (2009), and PerCom (2006). He received his B.E. from Jadavpur University in 2001 and his M.S. and Ph.D. from the University of Texas at Arlington in 2004 and 2008. He is also the co-founder of AI Sense LLC.*

## Session 1 - Smart Healthcare Systems and Analytics

11:00 - 12:30 · Session Chair: John Templeton

### **BlackOps: GIS-Informed Planning for Healthcare Resilience Amid Power Grid Outages**

*Modeste Mefenya Kenne, Andrew Chio, Nalini Venkatasubramanian (University of California, Irvine, USA); Zhenghui Hu (ImageCat, Inc., USA); Julie Rousseau (University of California Irvine School of Medicine, USA)*

### **Precomputed 1D-CNNs for Atrial Fibrillation Detection on Tiny Smart Sensor Systems**

*Lukas Einhaus, Natalie Maman, Julian Hoever, Andreas Erbsloeh, Gregor Schiele (University of Duisburg-Essen, Germany)*

### **FedAVL: Automated Vertical Federated Learning for Heterogeneous Healthcare Data**

*Ferdinand Kahenga (University of the Western Cape, South Africa & Université Don Bosco de Lubumbashi, DRC); Gad Tambwe (Université Don Bosco de Lubumbashi, DRC); Antoine Bagula (University of the Western Cape, South Africa & New Horizons University, DRC); Jovita Nyanyukweni Mateus (University of the Western Cape, Namibia & Namibia University of Science and Technology, Namibia); Sajal K. Das (Missouri University of Science and Technology, USA)*

### **TabHealth: Towards a Self-Supervised Tabular Foundation Model for Smart Healthcare**

*Mattia G. Campana, Franca Delmastro (IIT-CNR, Italy); Giada Anastasi, Stefania Pieroni, Michela Franchini, Sabrina Molinaro (Italian National Research Council, Italy)*



## Session 2 - Networks and Systems Simulation

13:30 - 14:15 · Session Chair: Claudio Cicconetti

**DataCenterGym: A Physics-Grounded Simulator for Multi-Objective Data Center Scheduling**

*Nilavra Pathak (Expedia Group, USA); Samadrita Biswas (Curia Global, USA); Nirmalya Roy (University of Maryland, Baltimore County, USA)*

**Bounded-Time Neighbor Discovery in 3D Free-Space Optical Networks with LoRa Assistance**

*Suman Bhunia, Peter A. Jamieson, Zach Copenhaver, Blake Rile (Miami University, Ohio, USA)*

## Session 3 - Industry Track

14:15 - 15:00 · Session Chair: Davide Giacalone

**Empowering 9-1-1 Calltaking Training with Generative AI: Experiences and Lessons Learned**  
*Zirong Chen, Meiyi Ma (Vanderbilt University, USA)*

**ML-based SoH Estimation for Li-Ion Batteries using CC-Phase Charging Voltage Features: Insights on Minimum and Optimal Training Datasets**

*Giada Pietroccola, Mario Molinara, Francesco Porpora, Claudio Marrocco (University of Cassino and Southern Lazio, Italy); Luca Gerevini, Michele Vitelli (E-Lectra s.r.l., Italy)*

## PhD Forum: One Minute Madness

15:30 - 16:00

PhD Forum participants introduce themselves and their research to the conference audience in one minute, using a single slide.

## Poster and Demo Session / PhD Forum

16:00 - 18:00 · Poster & Demo Co-Chairs: Brent Lagesse (University of Washington Bothell, USA); Mario Molinara (University of Cassino and Southern Lazio, Italy)

- *The full list of accepted posters, demos and work-in-progress papers is provided in the Posters, Demos & Work-in-Progress section at the end of this booklet.*
- *The PhD Forum contributions are presented in the Poster & Demo area. The full list of accepted PhD Forum contributions is provided in the Monday 22 June – PhD Forum section.*



# 3rd Day - Wednesday 24 June

## Keynote - Prof. Suman Banerjee

09:30 - 10:30



### **Lightweight Edge AI for Sustainability, Spectrum Sensing, Public Safety, and More**

*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 Prof. Banerjee 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.*

### **Speaker Profile**

*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, and a recipient of multiple award papers at conferences such as ACM MobiCom, ACM CoNEXT, and IEEE Dyspan. Technology developed by Prof. Banerjee has won various accolades, including the first prize at the Wisconsin Governor's Business Plan Competition in 2011 and the Interdigital Innovation Challenge in 2012. He was a co-founder of multiple startups, including StratusWorx (acquired by Ericsson in 2020) and OnTracMD (merged with MiCarePath in 2022). He served as chair of ACM SIGMOBILE between 2013 and 2017. He is a Fellow of the ACM and of the IEEE.*



## **Session 4 - Best Paper Candidates**

**11:00 - 12:30 · Session Chair: Daniela Nicklas**

**A Comparative Analysis on the Performance of Upper Confidence Bound Algorithms in Adaptive Deep Neural Networks**

*Grigorios Papanikolaou, Ioannis Kontopoulos (National Technical University of Athens, Greece); Konstantinos Tserpes (National Technical University of Athens & Harokopio University of Athens, Greece)*

**Resource-Aware Federated Learning for Malware Detection on Smart Devices**

*Andrea Augello, Alessandra De Paola, Giuseppe Lo Re (University of Palermo, Italy)*

**Dynamic Pickup-and-Delivery Routing with Early-Arrival Waiting Limits and Station Relocation**

*Agrima Khanna, Sophie Pavia, Ayan Mukhopadhyay, Abhishek Dubey, Fangqi Liu (Vanderbilt University, USA)*

## **Session 5 - Human-Centric Sensing and Activity Recognition**

**13:30 - 15:00 Session Chair: Francesca Righetti**

**Simultaneous Multi-target Tracking and Gesture Recognition via Distributed Radar-Sensing Systems**

*Wanru Ning, Hongliu Yang (Peking University, China); Dariush Salami (Nokia Bell Labs, Finland); Yongtao Ma (Tianjin University, China); Stephan Sigg (Aalto University, Finland)*

**Efficient and Adaptive Human Activity Recognition via LLM Backbones**

*Aleksandr Bredikhin (UGA, Russia); Philippe Lalanda (Grenoble University, France); German Vega (CNRS, France)*

**Reasoning Supervision for Enhancing Video-based Human Activity Recognition**

*Yilin Liu, Meiyi Ma (Vanderbilt University, USA)*

**Natural Language Driven Multi-Object Tracking via Joint Spatial, Visual, and Semantic Association**

*Azhar Hasan, Alex Richardson (Vanderbilt University, USA); Gabor Karsai (Vanderbilt University / ISIS, USA)*

**Guided Tour | 17:00 - Details provided on site**

**Social Dinner | 20:00**

**Grecale - Via Circuito, 34, 98164 Torre Faro, Messina (ME).**

See the Logistics & Directions section for full details.



# 4th Day - Thursday 25 June

## Panel - Intelligent Spaces: Smart Computing in the Age of Generative and Agentic AI

09:30 - 10:30

A panel on 'Intelligent Spaces' will debate the current advances and anticipated impact of Generative and Agentic AI on Smart Computing.

Moderator: *Mohan Kumar (Rochester Institute of Technology, USA)*

Panelists: *Antonio Puliafito, Hirozumi Yamaguchi, Daniela Nicklas, Carlo Vallati*

**Time 09:30 - 10:30, Thursday 25 June 2026**

## Session 6 - Machine Learning for Edge Systems and Security

11:00 - 12:30 · Session Chair: Fabrizio De Vita

**Emulated Autoencoder: A Defense against CNN Evasion Attacks for Resource Constrained Devices and High Throughput Applications**

*Dat Le, Brent Lagesse (University of Washington Bothell, USA)*

**A Two-Stage Hybrid Deep and Machine Learning Framework for Anomaly Detection and Classification in IoT Sensor Networks**

*Chiraz Houaidia (Lab CRISTAL, ENSI, Manouba University, Tunisia); Ichrak Amdouni, Leila Azzouz Saidane (ENSI, University of Manouba, Tunisia)*

**CoBO: Conformal-Constrained Bayesian Optimization for Energy-Efficient SLO-Aware DNN Inference**

*Ivan Dokuchaev, Ali Kadhum Idrees (University of Applied Sciences and Arts Dortmund, Germany); Rolf Schuster (Open Edge Computing Initiative, Germany)*

**FedAdapt++: Plane-consistent Federated Learning for SDN-IoT Anomaly Detection**

*Jovita Nyanyukweni Mateus (University of the Western Cape, Namibia & Namibia University of Science and Technology, Namibia); Guy-Alain Lusilao-Zodi (Polytechnic of Namibia, Namibia); Antoine Bagula (University of the Western Cape, South Africa & New Horizons University, DRC); Ferdinand Kahenga (University of the Western Cape, South Africa & Université Don Bosco de Lubumbashi, DRC)*



## Session 7 - Smart Mobility and Urban Systems

13:30 - 15:00 · Session Chair: Mohan Kumar

**A Congestion Mitigation Approach for Ground Vehicles with Diverse Advanced Driver Assistance Systems in Smart Transportation Networks**

*Doris E. M. Brown, Sajal K. Das (Missouri University of Science and Technology, USA)*

**A Simulation-based Framework for Dynamic Light Pollution Prediction in Urban Air Mobility**

*Ying Chieh Wang, Tatsuya Amano, Hirozumi Yamaguchi (The University of Osaka, Japan)*

**Navigating Sparsity: Evaluating the Impact of Controlled Data Reduction on Synthetic Mobility Data Utility**

*Abeera Ayesha Riaz, Muhammad Tayyab Shafique, Leonie Ackermann, Debasree Das (Otto-Friedrich-Universität Bamberg, Germany)*

**Operating Regimes of Decentralized Learning Under Mobility and Bandwidth Constraints**

*Samuele Sabella, Chiara Boldrini, Lorenzo Valerio, Marco Conti, Andrea Passarella (IIT-CNR, Italy)*

**TownHall Meeting | 15:30 - Open discussion for the SmartComp community**

**Concluding Remarks | 16:00**

**Closing of SmartComp 2026**



# Posters, Demos & Work-in-Progress Track

## Welcome Message from the Posters/Demos/WIP Co-Chairs

Dear Colleagues, on behalf of the SMARTCOMP 2026 Posters/Demos/WIP Co-Chairs, we warmly welcome you to the 12th International Conference on Smart Computing. SMARTCOMP gathers a multidisciplinary community at the intersection of IoT, cyber-physical systems, edge computing, big data, machine learning and AI. The Posters/WIP forum showcases novel ideas and preliminary results, while the Demo session offers hands-on experiences with innovative platforms. Enjoy the discussions and the conference!

**Brent Lagesse** · (University of Washington Bothell, USA)

**Mario Molinara** · (University of Cassino and Southern Lazio, Italy)

**SMARTCOMP 2026 Posters/Demos/WIP Co-Chairs**

Paper ID	Track	Title	Authors
#195	Poster/WIP	MAD-EBA: Multi-Attribute Dimensional Entity Behaviour Analytics for Anomaly Detection in Smart Cloud Systems	Venkata Saikumar Thalupuru, Santhoshini Pranathi Singaraju, Vishal Gupta
#194	Poster/WIP	Capacitive Swipe Gesture-Based User Identification Using Deep Learning and Image Fusion	Kaye Feinberg, Md Shafaeat Hossain, Jundong Chen
#193	Demo	SLImTAG: Lightweight Segmentation with Domain Adaptation	Giulio Del Corso, Oscar Papini, Federico Volpini, Giada Anastasi, Sara Colantonio
#190	Poster/WIP	Privacy-preserving Agentic Reporting for IoT Asset Monitoring: A Preliminary Case Study	Christian Riccio, Fabrizio Lapiello, Roberto Falso, Flavia Valentina Di Rauso, Emanuel Di Nardo, Angelo Ciaramella, Mauro Iacono
#189	Poster/WIP	Optimization of Energy Costs and EV Battery Health in V2G Enabled Homes	Jainam J. Dhruva, Dzifa Hodey, Simone Silvestri
#187	Demo	Low-Latency Distributed Architectures for Real-Time Non-QM Mortgage Underwriting	Lakshya Jain
#143	Demo	Waste Collection Trucks as Mobile Urban Sensing Platform: A LoRaWAN-Based Prototype	Carmine Colarusso, Ida Falco, Eugenio Zimeo
#120	Poster/WIP	From Benchmark Images to Georeferenced Street Inspection: Lessons from an Operational Road Distress Detection Pipeline	Joaquín Olivares Bueno, Jose Maria Castillo-Secilla, Jose M. Palomares
--#216	Demo	Deriving LUT-based Neural Network Hardware Accelerators for Tiny Smart Sensor Systems	Lukas Einhaus, Natalie Maman, Julian Hoever, Andreas Erbsloeh, Gregor Schiele

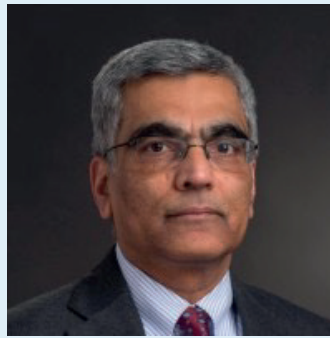


# Organisation Committee

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*University of Messina, Italy*



**Mohan Kumar**  
*Rochester Institute of Technology, USA*

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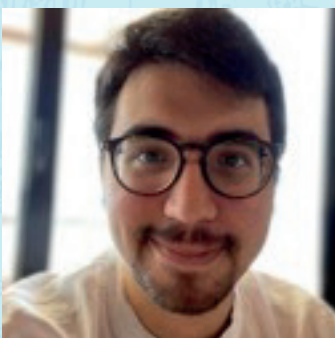


**Daniela Nicklas**  
*University of Bamberg, Germany*



**George Roussos**  
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## Local Chair



**Fabrizio De Vita**  
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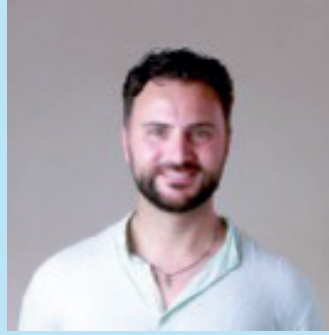
**Francesco Longo**  
*University of Messina, Italy*



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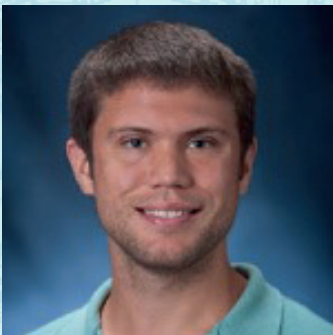


**Dirk Pesch**  
*University College Cork, Ireland*

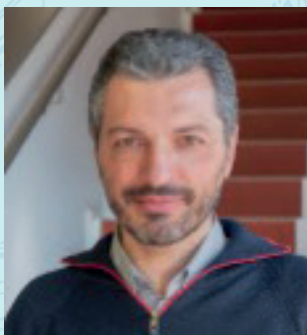


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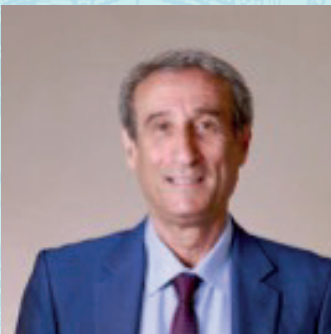


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*Missouri University of Science  
and Technology, USA*



# Technical Program Committee

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