17th International Conference on Ubiquitous Computing and Ambient Intelligence
UCAmI 2025

Florence, Italy
November 26 to 28th, 2025

Conference Background & Goals

Ubiquitous Computing (UC), as envisioned by Weiser in 1991, has recently evolved to a more general paradigm known as Ambient Intelligence (AmI) represents a new generation of user-centred computing environments and systems. These solutions aim to find new ways to obtain a better integration of information technology in everyday life devices and activities.

AmI environments are integrated by several autonomous computational devices from modern life ranging from consumer electronics to mobile phones. Ideally, people in an AmI environment will not notice these devices, however, they will benefit from the services these solutions provide. Such devices are aware of the people present in such environments and can react to their gestures, actions, and context. Recently the interest in AmI environments has grown considerably due to the new challenges posed by society, demanding highly innovative services, such as vehicular ad hoc networks (VANET), Ambient Assisted Living (AAL), e-Health, Internet of Things, Home Automation, amongst others. The focus of this edition of the UCAmI Conference will be "Technologies in the Creation of Sustainable Ambient Intelligence Solutions".

Publication

All accepted papers will be included in **Proceedings published by Springer.** Selected papers will be invited to submit extended versions of the work to a series of dedicated Special Issues journals:

- Cooming soon

Journals will be announced shortly on our website (link at the top of the email)

Important Dates

Abstract submission:	**June, 15th 2025**
Paper submission:	**July, 15th 2025**
Notifications:	**September 15th, 2025**
Camera-ready version:	**October 1st, 2025**
Conference dates:	**November 26 to 28th, 2025**

TRACKS

AmI FOR HEALTH & A^{3}L (AMBIENT, ACTIVE & ASSISTED LIVING) (Topics)

- The role of AI and machine learning in promoting A3L
- The role of Social Determinants of Health in Tech-Driven Care
- Smart homes and mobile ecosystems to promote health and independent living
- User-centered design and user experience in health environments.
- Evaluation and validation of ambient assisted living systems and applications
- Synthetic Data for A3L: Collection, Cleaning, Processing, Distribution, and Storage
- Activity recognition and behavior analysis in A3L environments
- Ambient assisted living and chronic disease management
- Business models and commercialization of ambient assisted living products and services
- Improving healthcare using medical digital twin technology
- Digital interventions for depression, mental health issues and quality of life improvement
- Education, training, and e-Learning systems in Health domains
- Mobile, affective, and multimodal interfaces for A3L
- Preventive care in A3L environments

INTERNET OF EVERYTHING (IOT, PEOPLE & PROCESSES) AND SENSORS (Topics)

- IoE (IoT included) enabling technologies, techniques and methods
- IoE application and services
- Current and future trends in IoE
- IoE societal impacts and Ethical implications of IoE
- IoE interoperability, integration and performance
- IoE experimental results and deployment scenarios
- Human factors in IoE
- Applications of hybrid sensor networks
- Design and evaluation of interfaces for smart devices in the IoT ecosystem
- Personalization of interactions in IoT
- Robotic integration in Smart Environments
- AI for the embedded IoT/IoE and Edge computing

(AI)² - ARTIFICIAL INTELLIGENCE FOR AMBIENT INTELLIGENCE (Topics)

- Transparency and Explainability of AI
- AI & Machine learning for sustainable development goals
- Resource optimization and conservation in ambient intelligence using AI
- AI-powered advanced human interaction
- AI assisted interaction for disabled people
- Emotion recognition in ambient intelligence
- Signal analysis through neural networks
- Deployable deep learning models in low resources systems
- Synthetic data generation for interaction research
- Computer vision applied in ambient intelligence
- AI in smart classrooms
- Using massive data to support decision-making in AmI environments
- Evaluation methods for AI in interactive systems
- Data pre-processing techniques for multimodal data
- Bias mitigation strategies in AI for human interaction
- Natural interaction through LLMs
- LLM pruning techniques

Special Sessions

GAMES AND WELLNESS: GAMES FOR MENTAL, PHYSICAL AND EMOTIONAL HEALTH AND WELLNESS (Topics)

- Affective Games
- Mental health and video games
- VR & AR for Healthcare
- Serious Games & Gamification
- Game Design for Wellness
- Digital Twins/Shadows
- Game Pedagogy
- Technical Game Development
- Visualization and Simulation
- Artificial Intelligence in Games
- UX and UI for Accessibility
- Peripherals in Gaming experiences
- HCI in games

FOUNDATION MODELS VS ENERGY EFFICIENCY IN AMBIENT INTELLIGENCE (Topics)

- Foundation models in AmI – LLMs, multimodal models, self-supervised learning
- Computational efficiency – Optimizing AI models for deployment in AmI (quantization, pruning, distillation, edge AI)
- Energy-aware AI – Can foundation models be adapted to work efficiently in resource-limited smart environments?
- Privacy & decentralization – Challenges of running foundation models on local/edge devices while preserving energy efficiency
- Sustainable AI for smart homes & healthcare – How to balance performance, interpretability, and sustainability?
- Hybrid models – Combining traditional lightweight AI (rule-based, classical ML) with foundation models for efficiency

SUSTAINABLE AND SECURE FUTURE IOT/IIOT NETWORKS AND SERVICES CHALLENGES, APPLICATIONS AND METRICS (Topics)

- Scalable authentication and authorization
- Security resource auditing and control
- Secure communication protocols: proposals and modifications
- Advances in the use of post-quantum and/or hybrid systems
- Security and scalability aspects in the network
- Security and scalability aspects in software and its distribution
- Privacy and anonymity aspects
- Energy efficiency and sustainability of software and protocols
- Measurement and evaluation of algorithms and protocols

DOCTORAL CONSORTIUM

The **UCAmI 2025 PhD Symposium** aims to foster the development of doctoral research in the fields of **Ubiquitous Computing and Ambient Intelligence** by providing a forum where PhD students can present their PhD topics, research ideas, receive constructive feedback, and engage with senior experts and peers in the community. This symposium offers an excellent opportunity for doctoral students to refine their research objectives, gain insights from experienced researchers, and build connections with fellow students working on related topics.