

9th International Conference on Ubiquitous Computing and Ambient Intelligence (UCAmI 2015)

7th International Work-conference on Ambient Assisted Living (IWAAL 2015)

1st International Conference on Ambient Intelligence for Health (AmIHEALTH 2015)

Puerto Varas, Patagonia, Chile
December 1-4, 2015
http://mami.uclm.es/ucami-iwaal-amihealth-2015

The conference proceedings in the Springer LNCS series.
Extended versions of selected papers will be published in ISI Journals special issues.

Important dates:
Paper submission: **June 15th, 2015** **(extended)**
Notification of acceptance: August 15th, 2015
Camera-ready version: September 15th, 2015
Conference dates: December 1-4, 2015

Selected papers will be published in the following journals:
- Journal of Biomedical Informatics
- Sensors Journal
- Journal of Medical Systems
- Health Informatics Journal
(More Journals to be announced)

Impact Factor (2013)
2.482
2.048
1.372
0.787

Conference background & goals:

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

Several autonomous computational devices of modern life ranging from consumer electronics to mobile phones integrate AmI environments. Ideally, people in an AmI environment will not notice these devices, but they will benefit from the services these solutions provide them. Such devices are aware of the people present in those environments by reacting to their gestures, actions and context. Recently the interest in AmI environments has grown considerably due to 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 and Smart Cities, among others. The main focus of this edition of the UCAmI Conference will be "*Ambient Intelligence: Sensing, Processing and Using Environmental Information*".

Ambient Assisted Living (AAL) proposes solutions based on Information and Communication Technologies (ICT) to enhance the quality of life of elderly people. AAL promotes the provision of infrastructures and services for the independent or more autonomous living, via the seamless integration of info-communication technologies within homes and residences, thus increasing their quality of life and autonomy and reducing the need for being institutionalized or aiding it when it happens. This edition of IWAAL Conference focuses on "*Development and testing of ICT-based solutions in real life situations which enable and support sustainable care models for older adults*".

One natural and critical human need, where Ambient Intelligence can be used, is healthcare. In such a domain, ubiquitous systems can be used to improve quality of life of the people. While Ambient Intelligence in health applications is increasingly getting research momentum, it has not reached a level of maturity yet. Reasons for such deficiency include not only the challenges of understanding the health domain by computer scientists, but also the difficulty of dealing with such a critical domain, where errors are unacceptable. This first edition of the AmIHEALTH is aimed at boosting this area of research by focusing not just on innovations on the infrastructure and technology required for achieving the ambient intelligence in health,

such as smart environments and wearable medical devices, but also on the development of novel testing, verification and evaluation techniques that make possible the actual implementation of such innovations.

UCAmI Topics	*IWAAL Topics:*	*AmIHealth Topics:*
Ad Hoc and Sensor Networks: - Middleware for wireless sensor networks - Networked sensing and control - Sensor fusion, tracking and positioning - Embedded software for sensor networks - Environmental sensing applications - Body sensor networks - Vehicular ad-Hoc networks - Network protocols for smart environments **Human Interaction in Ambient Intelligence** - Human-centric interfaces for AmI environments (multi-modal, touch computing, NFC, 2D codes) - Context- and location-aware frameworks and Sensing. - Virtual and augmented reality. - Smart-object based interaction, persuasive computing and tangible interfaces. - Ubiquitous and ambient displays. - Detection and support for collaboration, user intentions and activity recognition, analysis of psychological user states. - Digital TV-based interfaces. **ICT instrumentation and Middleware support for Smart Environments and Objects** - Mobile ad hoc networks and Wireless Sensor Networks (WSNs). - RFID and 2-D codes for real-world labelling. - Smart sensors and wearable computing. - Custom made Internet-connected objects. - Semantic middleware infrastructure (Semantic Web, OSGi, DPWS, home automation standards). - Mining techniques to mobile and sensor data. - Contextualized analysis of social and information networks. **Adding intelligence for Environment Adaptation** - Knowledge representation and management for user and environment modelling and understanding (Ontologies, semantic Web, logic, expert systems multi-agents). - Autonomic computing, responsive and proactive systems and dynamic reconfiguration. - Ontologies for user and environment modelling and understanding. - Learning, reasoning and adaptation techniques over context models. - Collaborative smart objects. - Open data applied to smart environments. **Key application domains for Ambient Intelligence** - Social robotics. - Intelligent transport systems (ITS). - Context-aware apps based on Open and Crowd sourced data.	**AAL Solutions:** - AAL solutions to reconcile increase demand with limited resources. - AAL solutions for supporting formal and informal carers. - AAL solutions for prevention and self-management. - AAL solutions to support the shift towards better care at home and in the community. - AAL solutions to facilitate personalised and effective health interventions. **Technological perspective:** - Big data - Internet of things - Smart cities - Urban Analytics - Wearable technologies - Sensor networks - Multimodal interfaces - Health monitoring - Mobile computing - Context and behaviour awareness - Knowledge management. **Human perspective:** - Dependence - Chronic diseases - Quality of life - Active ageing - Social integration - Self-care - Entertainment. - Behavior Change - Training/ Educating Careers. **Business perspective:** - Standards and interoperability - Potential AAL markets - Exploitation strategies - Real experiences - Business-Academia Synergies. **Security and Privacy Issues in AAL** - Security, privacy and trustworthiness in AAL communications and smart environments. - Freedom and privacy in AAL. **Key application domains for Ambient Assisted Living** **Other related topics** - Platforms for the delivery of AAL - Ambient Intelligence for AAL - Context-Awareness in Assistive Environments - Persuasive Computing - Activity modelling and recognition - Behaviour Analysis - Middleware Architectures for AAL - Interoperability and standards - Security and data management - Sensing and Monitoring solutions within AAL	**Infrastructure of AmIHealth Environments.** - Modelling and simulation of smart environments for Health services. - Novel networks architectures suitable for AmIHealth environments. - Body-worn and Environmental sensor networks architectures. **Technologies** for implementing AmIHealth Environments. - Vital Signs Sensors Communications (*ECG, EMG, Blood Oxygen, Blood Pressure, etc…*). - Individual Daily Sensors (*Accelerometer, Microphone, Gyroscope, Camera, Locations, etc*). - Robotics and agent integration in AmIHealth environments. - Virtual reality and augmented reality paradigms used in AmIHealth environments. - Cloud computing and innovative data models in support of e-Health services. - Big data analytics in AmIHealth environments' context. - mHealth **Frameworks** related with AmIHealth environments. - m-Health related frameworks. - Ubiquitous and pervasive e-Health frameworks. **Applied Algorithms** in e-Health systems - Machine learning, pattern recognition, prediction, inference algorithms. - Clinical decision support systems. - Scheduling, resource planning and optimization algorithms. - Health data visualization. - Biosignal processing. **Interactions** within the AmIHealth environments - Clinical user interfaces. - Health usability - Collaborative medicine systems. - e-Learning tools and AmIHealth environments focused on healthcare education. - Affective computing in AmIHealth environments - Cognitive informatics in healthcare. - Awareness technics for AmIHealth environments - sHealth (Smart Cities Interactions) **Applications and Case Studies** of AmIHealth environments - Individual perspective evaluation: (formal/ informal) caregiver, patient or disabled person. - Hospital perspective evaluation: hospital management, nursing care protocols, pharmacy management, clinical information systems. - Business models for AmIHealth environments - Public Health **Metrics** (protocols, procedures and techniques) for Health environments. - Evaluation, Verifications and Reliability - Quality of Service and Energy Efficiency - Security and Privacy **Other Related Topics** - Collaborative medicine systems - New tools in Healthcare education - e-Learning environments for health - Electronic prescriptions - IoT for healt

UCAmI PC Chairs: - Giancarlo Fortino, Università della Calabria, Italy. - Juan Manuel García-Chamizo, University of Alicante, Spain.	**IWAAL PC Chairs:** - Luis A. Guerrero, University of Costa Rica, Costa Rica. - Ian Cleland, University of Ulster, Ireland.	**AmiHealth PC Chairs:** - Ramón Hervás, Castilla-La Mancha University, Spain Vladimir Villarreal, Technological University of Panama

Types of Submission:

Long papers. *Intend to allow presentation of academic research results of high quality. Submissions must contain an original contribution, and may not have already been published in another forum, nor be subject to review for other conferences or publications. Contributions should include unpublished results of research, case studies or experiences that provide new evidence about the research or application regarding to the main topics. Articles accepted in this category will be published in the proceedings of the event.* ***Long papers must not exceed 12 pages (including figures and appendices).***

Short papers. *Intend to allow presentation of ongoing studies with partial (but significant) results. Submissions must contain an original contribution, and may not have already been published in another forum, nor be subject to review for other conferences or publications. Articles accepted in this category will be published in the proceedings of the event.* ***Short papers must not exceed 6 pages (including figures and appendices).***

Doctoral Consortium. *PhD students are invited to present the topic and progress of their research, in order to obtain feedback from a panel of experts.* ***Papers for doctoral consortium must not exceed 8 pages (including figures and appendices).***

Posters. *Posters will be peer-reviewed by members of the Posters Committee based on originality, significance, quality, and clarity. Poster authors are not required to transfer copyright. Accepted poster papers will be allocated 2 pages in the conference proceedings. In addition to the* ***3-pages submission****, accepted poster authors will be asked to generate a poster and possible demonstration to be displayed in a dedicated poster area and presented during a poster session at the conference (see call for posters).*

Papers format:

Lecture Notes in Computer Science (LNCS). Please ensure that your papers are formatted correctly and are within the specified page limits. Author information and templates are available in Information for LNCS Authors web, or download the templates here for Latex and Word. All papers should be written in English.

Submission Procedure:
All paper types must be submitted through the EasyChair system: https://easychair.org/conferences/?conf=ucami-iwaal-amihealth-2015

Conference Venue:

Dreams Hotel (5*), Puerto Varas, Patagonia, Chile
http://www.mundodreams.com/hotel/hotel-dreams-los-volcanes/