

# 16th International Conference on Embedded and Ubiquitous Computing - EUC 2018

29-31 October, Bucharest, Romania



<http://euc2018.hpc.pub.ro/>

The 16th International Conference on Embedded and Ubiquitous Computing (EUC 2018) is the next event in a series of highly successful International Conferences on Embedded and Ubiquitous Computing (EUC). This year's edition will take place in Bucharest, Romania, between 29 and 31 October, 2018. We welcome you in Bucharest!

Embedded and ubiquitous computing is an exciting paradigm that promises to provide computing and communication services to the end users all the time and everywhere. Its systems are now invading in every aspect of our daily life and promise to revolutionize our life much more profoundly than elevators, electric motors or even personal computer evolution ever did. The emergence of this technology is a natural outcome of research and technological advances in a variety of areas including embedded systems, pervasive computing and communications, wireless networks, mobile computing, distributed computing and agent technologies.

This year we emphasize in particular the relation between Embedded and ubiquitous computing, and Ambient Assisted Living. As such, we welcome the participation of the SHELD-ON and AAPELE COST Actions. The increase in medical expenses due to societal issues like demographic ageing, puts strong pressure on the sustainability of health and social care systems, on labour participation, and on quality of life for older people or for persons with disabilities. Smart Habitats for Older Adults and Enhanced Living Environments (ELE) promote 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 maintaining one's home the preferable living environment for as long as possible, therefore not causing disruption in the web of social and family interactions.

Different ubiquitous technologies are today being developed, aiming to construct safe environments around assisted peoples and help them maintain independent living. Most efforts towards the realisation of ambient assisted living systems are based on developing pervasive devices and use Ambient Intelligence to integrate these devices together to construct a safety environment. The missing interaction of multiple stakeholders needing to collaborate for environments supporting a multitude of AAL services, as well as barriers to innovation in the markets concerned, the governments, and health and care sector, these innovations do not yet take place at a relevant scale. Many fundamental issues in AAL remain open. Most of the current efforts still do not fully express the power of human being, and the importance of social connections and societal activities is less noticed. And effective solutions requires appropriate ICT algorithms, architectures and platforms, having in view the advance of science in this area and the development of new and innovative connected solutions (particularly in the area of

pervasive and mobile systems). *The EUC conference aims, as such, to provide a platform for the dissemination of recent research efforts that explicitly aim at addressing these challenges, and supports the presentation of advanced solutions in these areas.*

## CONFERENCE TOPICS

The EUC conference will provide a forum for engineers and scientists in academia, industry, and government to address all challenges including technical, safety, social, and legal issues related to embedded and ubiquitous computing and to present and discuss their ideas, results, work-in-progress and experience on all aspects of embedded and ubiquitous computing. Topics of particular interest include, but are not limited to:

### **Mobile systems and applications for embedded and ubiquitous computing**

- Mobile and ubiquitous computing architecture
- Tools for building and measuring mobile systems
- Innovative embedded, wearable or mobile devices
- Systems for location and context sensing and awareness
- Tools for building and measuring mobile and pervasive systems
- Wireless sensor network protocols

### **Enhanced Living Environments and Smart Habitats for Older Adults**

- Design and development of Smart Support Furniture and habitats, including multi-disciplinary work spreading domains such as Health care, Psychology, Ergonomics, Construction, etc.
- Design and development of innovative ICT solutions integrated into Smart Support Furniture and habitat environments
- Smart support furniture and habitat environments for active ageing
- Sensing and Monitoring, including identification and sensing technologies, risks detection, activity recognition, tele-mobile monitoring, diet and exercise monitoring, drugs monitoring, vital signs supervision, identification of daily activities
- ICT instrumentation and Middleware support for Smart Environments: Mobile Ad Hoc Networks and Wireless Sensor Networks (WSNs), RFID and 2-D codes for real-world labelling, smart sensors, wearable computing, custom made internet-connected objects, semantic middleware infrastructures (Semantic Web, OSGi, DLNA, DPWS, Home automation standards).
- Architectures and Platforms: smart homes and supervised homes, hospital communication management for Ambient Assisted Living, Living Labs

### **Hardware architectures and design tools**

- Reconfigurable architectures (e.g., FPGAs, CGRAs)
- System-level, high-level, and RTL/Logic synthesis
- Efficient hardware implementation for ubiquitous algorithms/computing
- Application-specific processors and platforms for ubiquitous computing
- Prototyping and simulation of ubiquitous and embedded applications
- System/Network-on-Chip
- Simulation and validation of mixed Hardware/Software systems

### **Security, safety and reliability/dependability**

- Cryptography, authentication, and privacy protection algorithms, protocols, architectures, and frameworks
- Malicious attack detection, analysis, and prevention
- Fault prevention, removal, forecasting, and tolerance of embedded and ubiquitous computing systems
- Verification, testing, and diagnosis tools and frameworks

- Security, privacy, safety, and dependability for hot areas: IoT, CPS, mobile computing, wireless sensor networks

#### **Software and programming tools for embedded and ubiquitous computing**

- Prototyping and simulation of ubiquitous and embedded applications
- Programming paradigms, languages, aspects of modeling and specification
- Software and system architectures, including compilers, memory management, virtual machines, scheduling, operating systems, middleware, and code generation etc.
- Modeling, analysis, and optimization of performance aspects such as timing, memory usage, energy, QoS, and reliability
- Formal methods and verification, model driven design and implementation
- Human-computer interaction and human-in-loop systems
- Power-aware and green embedded and ubiquitous computing
- Embedded and ubiquitous computing applications, cyber-physical systems, such as electric vehicle, power grid, sensing and monitoring

#### **Data analysis and data management for embedded and ubiquitous computing**

- Data management tools
- In-network query and processing
- Data mining and knowledge discovery
- High-performance data analytics tools and systems
- Integration of big data analytics in accurate decision-making and control
- Application case studies

## **COMMITTEES**

### Honorary Chairs

- **Laurence T. Yang**, St. Francis Xavier University, Canada
- **Kuan-Ching Li**, Providence University, Taiwan

### General Chairs

- **Ciprian Dobre**, University Politehnica of Bucharest, Romania
- **Francisco José Melero**, Centro Tecnológico del Mueble y la Madera, Spain
- **Francesco Palmieri**, University of Salerno, Italy

### Program Chairs

- **Nuno Garcia**, University of Beira Interior, Portugal
- **Michael Burnard**, University of Primorska Andrej Marusic Institute, Slovenia
- **Radu-Ioan Ciobanu**, University Politehnica of Bucharest, Romania
- **Mario Donato Marino**, Leeds Beckett University, United Kingdom

## **IMPORTANT DATES**

**Paper submission:** July 1, 2018

**Authors notification:** August 19, 2018

**Camera ready due:** September 2, 2018

**Author registration by:** TBA

**Early registration by:** TBA

**Conference:** October 29 to 31, 2018

## PAPER SUBMISSION

The submission Web site is: <https://easychair.org/conferences/?conf=euc2018>

The accepted papers from this conference will be submitted for publication by IEEE Computer Society in IEEE proceedings and submitted for inclusion into IEEE Xplore as well as other Abstracting and Indexing (A&I) databases (indexed by EI Compendex).

Distinguished papers, after further revisions, will be considered for possible publication in several SCI & EI indexed special issues of prestigious international journals. Proposals for Special Issues in [Sensors \(IF: 2.677\)](#), [Future Generation Computer Systems \(IF: 3.997\)](#), [Information Sciences \(IF: 4.832\)](#), and few others, are being organised.