

# UBICOMM 2017

## Forward

The Eleventh International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM 2017), held between November 12 - 16, 2017, in Barcelona, Spain, continued a series of events addressing fundamentals of ubiquitous systems and the new applications related to them.

The rapid advances in ubiquitous technologies make fruition of more than 35 years of research in distributed computing systems, and more than two decades of mobile computing. The ubiquity vision is becoming a reality. Hardware and software components evolved to deliver functionality under failure-prone environments with limited resources. The advent of web services and the progress on wearable devices, ambient components, user-generated content, mobile communications, and new business models generated new applications and services. The conference makes a bridge between issues with software and hardware challenges through mobile communications.

Advances in web services technologies along with their integration into mobility, online and new business models provide a technical infrastructure that enables the progress of mobile services and applications. These include dynamic and on-demand service, context-aware services, and mobile web services. While driving new business models and new online services, particular techniques must be developed for web service composition, web service-driven system design methodology, creation of web services, and on-demand web services.

As mobile and ubiquitous computing becomes a reality, more formal and informal learning will take pace out of the confines of the traditional classroom. Two trends converge to make this possible; increasingly powerful cell phones and PDAs, and improved access to wireless broadband. At the same time, due to the increasing complexity, modern learners will need tools that operate in an intuitive manner and are flexibly integrated in the surrounding learning environment.

Educational services will become more customized and personalized, and more frequently subjected to changes. Learning and teaching are now becoming less tied to physical locations, co-located members of a group, and co-presence in time. Learning and teaching increasingly take place in fluid combinations of virtual and "real" contexts, and fluid combinations of presence in time, space and participation in community. To the learner full access and abundance in communicative opportunities and information retrieval represents new challenges and affordances.

Consequently, the educational challenges are numerous in the intersection of technology development, curriculum development, content development and educational infrastructure.

The event was very competitive in its selection process and very well perceived by the international scientific and industrial communities. As such, it has attracted excellent contributions and active participation from all over the world. We were very pleased to receive a large number of top quality contributions.

The conference had the following tracks:

- Mobility
- Information Ubiquity
- Collaborative ubiquitous systems
- Users, applications, and business models
- Ubiquitous mobile services and protocols
- Ubiquity trends and challenges
- Ubiquitous networks
- Ubiquitous devices and operative systems
- Edge Computing in Factories of the Future
- Advances in Education with Ubiquitous 3D Applications

We take here the opportunity to warmly thank all the members of the UBICOMM 2017 technical program committee, as well as all the reviewers. The creation of such a high quality conference program would not have been possible without their involvement. We also kindly thank all the authors that dedicated much of their time and effort to contribute to UBICOMM 2017. We truly believe that, thanks to all these efforts, the final conference program consisted of top quality contributions.

We also gratefully thank the members of the UBICOMM 2017 organizing committee for their help in handling the logistics and for their work that made this professional meeting a success.

We hope that UBICOMM 2017 was a successful international forum for the exchange of ideas and results between academia and industry and to promote further progress in the field of ubiquitous systems and the new applications related to them. We also hope that Barcelona, Spain, provided a pleasant environment during the conference and everyone saved some time to enjoy the unique charm of the city.

### **UBICOMM 2017 Chairs**

#### **UBICOMM Steering Committee**

Sathiamoorthy Manoharan, University of Auckland, New Zealand

Ann Gordon-Ross, University of Florida, USA

Jaime Lloret Mauri, Polytechnic University of Valencia, Spain

Radosveta Sokullu, Ege University, Izmir, Turkey

Michele Ruta, Technical University of Bari, Italy

Wladyslaw Homenda, Warsaw University of Technology, Poland

Hiroaki Higaki, Tokyo Denki University, Japan

#### **UBICOMM Industry/Research Advisory Committee**

Miroslav Velez, Aries Design Automation, USA

Cornel Klein, Siemens AG/Corporate Research and Technologies - München, Germany

Dmitry Korzun, Petrozavodsk State University, Russia

Carla-Fabiana Chiasserini, Politecnico di Torino, Italy

Volkan Gezer, German Research Center for Artificial Intelligence (DFKI), Germany

Shaohan Hu, IBM Research, USA

Elmano Ramalho Cavalcanti, Federal Institute of Education Science and Technology of Pernambuco, Brazil

Lars Braubach, Complex Software Systems | Bremen City University, Germany

Girish Revadigar, UNSW Australia and Data61 | CSIRO, Sydney, Australia

Jon M. Hjelmervik, SINTEF Digital, Norway

Ming Jin, Lawrence Berkeley National Laboratory (LBNL) and UC Berkeley, USA