IoT 2017: The Seventh International Conference on the Internet of Things

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ABSTRACT

Over the past years, the IoT conference has become a gathering place for leading experts from industry and academia in the field of the Internet of Things. In addition to the core technical program with 21 accepted paper contributions from 15 countries, IoT 2017, which was held from October 22–25 in Linz, Austria, comprised two keynotes, five workshops, a doctoral colloquium, posters, demonstrations, art projects, and a panel session on the topic of cognitive products in the context of the Industrie 4.0 paradigm.

Author Keywords

Internet of Things Conference

INTRODUCTION

The rapid advancement and ubiquitous penetration of mobile networks, Web-based information creation and sharing, and software-defined networking technology are key to enable the IT-based sensing, prediction, and control of physical items. Pervasive connectivity, smart devices, and ever rising demand for data testify to an IoT that will continue to grow within and across industrial and personal domains. Computing power is dropping in price while new sensors are being developed and incorporated into everyday objects, and as people allow more and more IoT technology to enter their private and public surroundings, economies of scale lend themselves to the creation of ever more data-centric businesses. This applies to almost all business processes and has led to efforts by a broad range of industries to redesign their business models and processes along the Internet of Things (IoT) paradigm. Instrumenting and connecting devices has massive potential to deliver value, but requires a coordinated effort by research and industrial outfits: to maximize the social and economic benefits of this vision, issues of *interoperability*, *data and service integration*, *open platforms*, and *standardization across technology layers and application domains* have to be addressed.

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Figure 1. IoT 2017 Conference Participants.

With strong support from industry and academia, the *International Conference on the Internet of Things* has become the premier gathering place for visionary, academic researchers and practitioners in the IoT domain – to share, discuss, and witness cutting-edge research in all areas of development for the Internet of Things.

Building on the great success of the past iterations in the IoT conference series[1] in Stuttgart (DE; 2016), Seoul (SK; 2015), Cambridge (US; 2014), Wuxi (CHN; 2012), Tokyo (JP; 2010) and Zurich (CH; 2008), IoT 2017 took place in Linz, Austria. Bringing together researchers and practitioners from all disciplines involved in the design, development, management, and usage of IoT devices, this venue provides a unique opportunity to get a holistic view on the topic.

We would like to express our gratitude to everyone who contributed to making IoT 2017 a success: to the organization committee, reviewers, and the students who supported the event locally; to the organizers of adjunct workshops and of the IoT Art Track; to the Keynote speakers Prof. Falko Dressler and Prof. Luca Mottola, and most prominently to the conference's scientific contributors! We also would like to thank our sponsors: this conference would not have been possible without the support of the Robert Bosch GmbH, voestalpine Group, the state of Upper Austria, and the city of Linz.

MAIN CONFERENCE PROGRAM

We invited original research papers on all topics related to the Internet of Things that were reviewed and selected based on technical novelty, integrity of the approach and results, impact, and practical relevance.

[1] iot-conference.org

Figure 2. IoT 2017 Participants at the AEC Deep Space 8K.

Figure 3. Pro²Future Panel Discussion.

For the main conference program, we accepted 21 papers including work on applications, modeling, service-composition, privacy, and human factors. Each of the papers convinced the program committee of 41 IoT experts with novel and relevant insights into different aspects of the Internet of Things. The technical program also highlights the fact that the IoT conference has become a truly international venue with accepted paper contributions from 15 different countries. The program committee also selected two outstanding contributions for two best paper awards: the *IoT 2017 Best Paper Award* was awarded to the contribution "*Solar Energy Prediction for Constrained IoT Nodes based on Public Weather Forecasts*" by Frank A. Kraemer et al. [1] ; the special ACM-sponsored *IoT 2017 Best Student Paper Award* was awarded to the article "*A Visual Programming Approach based on Domain Ontologies for Configuring Industrial IoT Installations*" by Matúš Tomlein and Kaj Grønbæk [2].

DEMOS AND POSTERS AT ARS ELECTRONICA CENTER

The demo and poster session at the *Ars Electronica Center* [2] (AEC) was one of the highlights of the IoT 2017 conference. AEC provided a perfect environment for this session: in total, 17 posters and 3 demos demonstrated the broadness of IoT applications and research directions. In conjunction with IoT's Art Track (in collaboration with the *University of Art and Design Linz*), exhibits at the crossroads of research and art allowed the participants to discuss their ideas in an inspirational atmosphere and we were awestruck by a special presentation of the Ars Electronica Center's *Deep Space 8K* (see Fig. 2).

PRO²FUTURE PANEL ON INDUSTRIE 4.0

Within a panel session on the last day of the IoT conference, members of Pro²Future, the new Austrian COMET K1 Competence Center on *Products and Production Systems of the Future*[3] had the opportunity to introduce its key research topics and to discuss them with the participants of the IoT conference. Pro²Future is dedicated to research in the field of industrial ICT, with special regard on the development of cognitive products and cognitive production systems: in particular, the center will focus on the communication and interaction of these cognitive systems with each other and with people, their functional integration, and security aspects along the product life cycle. Pro²Future is seeking international research co-operations, for instance in the scope of joint EU projects where we can directly participate as a scientific partner, to jointly conduct visionary yet practically relevant research beyond the Industrie 4.0 vision.

Thank you all for your contribution to making IoT 2017 a success!

REFERENCES

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[2] https://www.aec.at/
[3] http://www.pro2future.at