2nd International Workshop on

Engineering the Web of Things (EnWoT)

Cáceres, Spain, 5 June 2018, in conjunction with the
18th International Conference on Web Engineering

Preface

The original goal of the World Wide Web was to serve as a platform for presenting digital content. Now, a few decades later, the Web is evolving to a platform where the worlds of the physical and the virtual meet. A growing number of Web-based services extend human abilities for social interaction and collaboration. The standard connectivity technologies foster this evolution for the rest of the things. From a software development perspective, the world of computing is shifting from the era of single device computing to a new era where literally every thing is Internet-connected and programmable. It is only logical to conclude that the Web will continue to evolve opening all new opportunities, challenges, and research questions for the Web engineering community.

Web of Things is the general term used for describing all the approaches of connecting physical things to the World Wide Web. At the moment, Web-based systems development is evolving from traditional centralized client-server based architectures towards more decentralized multi-device architectures in which people use several Web-enabled client devices, and data is stored simultaneously in numerous devices and cloud-based services. This paradigm shift will dramatically raise the new challenges for the device interoperability, implying significant changes for software architecture as well. On the other hand, this shift also opens new opportunities where the Web-based technologies enable the software to roam liquidly from one device to another without any hassle; The goal of many WoT applications is therefore that the software can follow the user to enable seamless interaction with the IoT devices where ever they go.

The 2nd International Workshop on Engineering the Web of Things was arranged to present the latest research and to discuss software engineering and development in this new exciting era of computing. The workshop was held on June 5th, 2018 in conjunction with the 18th International Conference on Web Engineering (ICWE 2018) in Cáceres, Spain. The workshop focused on various themes all the way from engineering the Internet of Things (IoT) with Web-based technologies to the user experience from the standpoint of multi-device software engineering and end-user development.

After the peer-review process, 5 papers were selected to be presented at the workshop. The papers covered various aspects of engineering the Web of Things and developing multi-device software:

The 1st paper was “Towards Distribution Options in the End-User Development of Multi-device Mashups” by Oliver Mroß and Klaus Meißner from Technis-

che Universität Dresden. The paper presented the authors' ongoing work for providing assistance in the end-user development of multi-device mashups (MDM) by recommending distribution options for available devices, their capabilities, and other resources to augment the user-driven mashup development.

The 2nd paper was "Towards Dynamically Programmable Devices Using Beacons" by Alejandro Pérez-Vereda, Daniel Flores-Martín, Carlos Canal, and Juan M. Murillo from the University of Malaga and the University of Extremadura. The paper describes the use of beacons to dynamically download and execute scripts on smartphones for updating the virtual profiles with context information, and instructions to trigger actions for the devices.

The 3rd paper was "Architecting Self-Adaptive Software Systems" by Anni Huuhtanen, Niko Mäakitalo, and Tommi Mikkonen from the University of Helsinki. The paper studies four different self-adaptive software approaches and evaluates their usage in different contexts. As a result, the paper concludes that a general solution should combine aspects from all the studied approaches.

The 4th paper was "A Modular Pill Dispenser Supporting Therapies at Home" by Paolo Buono, Fabio Cassano, Alessandra Legretto, and Antonio Piccinno from the University of Bari "Aldo Moro." The paper describes a device for the management of pills according to the user's therapy, with the Internet of things (IoT) devices and by allowing users to manage the pill dispenser by themselves. The paper also presented the results of user studies conducted with the prototype.

The 5th paper was "Towards a Runtime Verification Approach for the Internet of Things Systems" by Maurizio Leotta, Davide Ancona, Luca Franceschini, Dario Olianas, Marina Ribaudo, and Filippo Ricca from the Università di Genova. The paper described an approach for runtime verification to IoT systems with a formal specification describing the expected behavior of the system and the definition of appropriate input scenarios.

We are grateful to the Program Committee members for their work on the paper review and selection process. We would also like to thank all the authors and workshop participants for the interesting discussions.

Marina Mongiello
Niko Mäkitalo
Francesco Nocera
Diego Pérez Palacin
Tommaso Di Noia
Eugenio Di Sciascio
Vito Bellini
Luca Riccardi

Program Committee

Jesper Andersoon	HassoLinnaeus University, Sweden
Marco Autili	University of L'Aquila, Italy
Simona Bernardi	Universidad de Zaragoza, Spain
Stefano Bistarelli	University of Perugia, Italy
Antonio Bucchiarone	Fondazione Bruno Kessler, Italy
Radu Calinescu	University of York, UK
Rafael Capilla	Universidad Rey Juan Carlos, Spain
Giuseppe Desolda	University of Bari, Italy
Ivano Malavolta	Vrije Universiteit Amsterdam, The Netherlands
José Merseguer	Universidad de Zaragoza, Spain
Raffaela Mirandola	Politecnico di Milano, Italy
Henry Muccini	University of L'Aquila, Italy
Elisa Nakagawa	University of São Paulo, Brazil
Liliana Pasquale	Lero - The Irish Software Engineering Research Centre, Ireland
Luigi Patrono	University of Salento, Italy
Patrizia Scandurra	University of Bergamo, Italy
Romina Spalazzese	Malmö University, Sweden
Ronny Siebes	Vrije Universiteit Amsterdam, The Netherlands
Maria Spichkova	RMIT University, Australia
Danny Weyns	Katholieke Universiteit Leuven, Belgium
Sungwon Kang	Korea Advanced Institute of Science and Technology, Republic of Korea
Eva Kühn	Vienna University of Technology, Austria
Uwe Zdun	University of Vienna, Austria