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LNCS 11153

Current Trends in Web Engineering

ICWE 2018 International Workshops
MATWEP, EnWot, KD-WEB, WEOD, TourismKG
Cáceres, Spain, June 5, 2018
Revised Selected Papers



 Springer

Commenced Publication in 1973

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ISSN 0302-9743 ISSN 1611-3349 (electronic)
Lecture Notes in Computer Science
ISBN 978-3-030-03055-1 ISBN 978-3-030-03056-8 (eBook)
<https://doi.org/10.1007/978-3-030-03056-8>

Library of Congress Control Number: 2018959427

LNCS Sublibrary: SL3 – Information Systems and Applications, incl. Internet/Web, and HCI

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The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

ICWE aims to promote research and scientific exchange related to Web engineering, and to bring together researchers and practitioners from various disciplines in academia and industry in order to tackle emerging challenges in the engineering of Web applications and associated technologies, as well as to assess the impact of those technologies on society, media, and culture.

This volume collects the papers presented at the workshops co-located with the 18th International Conference on Web Engineering (ICWE 2018), held during June 5–8, in Cáceres, Spain. In the tradition of previous ICWE conferences, the workshops complemented the main conference, and provided a forum for researchers and practitioners to discuss emerging topics, both within the ICWE community and at the crossroads with other communities. As a result, we accepted the following five workshops, whose papers included in this volume underwent a rigorous peer-review process and were presented on June 5, 2018.

- First International Workshop on Maturity of Web Engineering Practices (MATWEP 2018)
- Second International Workshop on Engineering the Web of Things (EnWoT 2018)
- 4th International Workshop on Knowledge Discovery on the Web (KDWEB 2018)
- International Workshop on Engineering Open Data (WEOD 2018)
- First International Workshop on Knowledge Graphs on Travel and Tourism (TourismKG 2018)

The objective of the MATWEP workshop (five papers) was to provide an open discussion space combining solid theory work with practical on-the-field experience in the Web engineering area.

EnWoT 2018 (five papers) focused on various themes all the way from engineering the Internet of Things (IoT) with Web technologies to addressing the challenge of delivering a liquid user experience from the standpoint of multi-device software engineering and end-user development.

Finally, KDWeb 2018 (five papers) focused on the field of knowledge discovery from digital data, with particular attention for advanced data mining, machine learning, and information retrieval methods, systems, and applications.

The focus of the WEOD 2018 workshop (three papers) was to present the latest research on practical engineering approaches (a) to design and develop means for promoting the consumption of open data and (b) to design and develop composition mechanisms that help in combining open data sources.

The goal of TourismKG 2018 (13 papers) was to raise awareness of the importance of knowledge graphs in the travel industry and discuss their usage, challenges, enhancement, and ways of commercial exploitation.

We would like to thank all the workshop organizers for their excellent work in identifying cutting-edge and cross-disciplinary topics in the rapidly moving field of

Web engineering, and organizing inspiring workshops around them. A word of thanks also to the reviewers, for their meticulous work in selecting the best papers to be presented. Last, but not least, we would like to thank the authors who submitted their work to the workshops and all the participants who contributed to the success of these events.

July 2018

Cesare Pautasso
Fernando Sánchez-Figueroa
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Juan Manuel Murillo Rodríguez

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**1st International Workshop on Maturity
of Web Engineering Practices
(MATWEP 2018)**

1st International Workshop on Maturity of Web Engineering Practices (MATWEP 2018)

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Abstract. Knowledge transfer and adoption of software engineering approaches by practitioners is always a challenge for both academia and industry. The objective of the workshop MATWEP is to provide an open discussion space that combines solid theory work with practical on-the-field experience in the Web Engineering area. The topics covered are knowledge transfer of Web Engineering approaches, such as methods, techniques and tools in all phases of the development life-cycle of Web applications. We report on the papers presented in the edition 2018 and the fruitful discussion on these topics.

Keywords: Web engineering · Methods · Techniques
Tools · Knowledge transfer · Industrial environment

1 Introduction and Motivation

The First International Workshop on Maturity of Web Engineering Practices (MATWEP 2018) was held in conjunction with the 18th International Conference on Web Engineering (ICWE 2018) in Cáceres (Spain) on June 5th 2018. The motivation for this initiative stands in the aim of building a better bridge from theory to practice, from academia to industry.

The focus of this first workshop and future editions of MATWEP is the analysis and discussion on positive experiences and difficulties that arise in the construction of such bridges. The goal is to show the lessons learned in the knowledge transfer process. This way it promotes to obtain feedback from practitioners for improving Web Engineering techniques, methods and approaches developed in research-intensive environments.

2 Presentations

During the first edition of the workshop five papers were selected for presentations at the workshop; three of them were selected to be published in these proceedings. We hope you find these papers useful reading material.

The first paper describes how the Navigational Development Techniques (NDT) - an MDWE methodology - was applied to manage the test phase of a real-world case study, part of the ADAGIO project. L. Morales et al. show the advantages of the automated generation of test cases improving the quality of the final product, and how the feedback obtained will serve to improve the NDT-tools to reduce the computational cost of generating tests from complex functional requirements.

The second paper written by A. Kravchenko, R. R. Fayzrakhmanov, and E. Salinger focuses on different representations of web pages, and introduces BERYL, a novel framework and language, which consolidates a rule-based approach with machine learning. The rule-based approach is used for feature engineering and pattern recognition, while machine learning is used for classification based on the inferred features. The evaluation of BERYL help to identify some main points as feedback, and which can direct future work, such as the integration of a common framework for describing topology and various spatial relations, and the possibility of selecting the most relevant machine learning algorithm.

In the third paper E. Falzone, and C. Bernaschina present a MDD approach which organizes the model transformation rules and the code architecture in a way that preserves the manual modifications of the code defined outside the model-and-generate cycle, such as the code defining the look and feel of the user interface and the connection to the required service endpoints. They report on the experience using the MDD approach in the development of web and mobile applications for an energy demand management project, and the generation of game versions from IFML models, in which both the presentation code and the code for connecting the game to a back-end cloud platform were added manually.

For further information and material, such as the presentations slides, please visit the MATWEP 2018 website: <http://www.iwt2.org/matwep2018/>.

3 Discussion

The very fruitful discussion round during the last workshop session focused on the difficulties of the knowledge transfer and the different possibilities to make the adoption of new techniques, methods, and tools more successful in an industrial environment.

Difficulties were mentioned, such as the costs of the development of tools and their maintenance, as well as the provision of training courses and tool documentation. The question was posed, if the role of academia is to implement such tools, or instead should limit itself to develop new techniques and methods, eventually providing prototypes, that could be adopted by tool providers.

4 Acknowledgement

The organization of this workshop has been supported by the POLOLAS project (TIN2016-76956-C3-2-R) of the Spanish Ministry of Economy and Competitiveness, and the investigation plan VPPI of the University of Seville.

We like to express our gratitude to the authors and presenters for the well-prepared presentations, all the workshop participants for their questions and comments, the MATWEP Program Committee that did a great job reviewing the submitted papers, and the ICWE 2018 Organizing Committee for their excellent support.

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