Lecture Notes in Computer Science **10224**

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

More information about this series at http://www.springer.com/series/7408

Jürgen Großmann · Michael Felderer
Fredrik Seehusen (Eds.)

Risk Assessment and Risk-Driven Quality Assurance

4th International Workshop, RISK 2016
Held in Conjunction with ICTSS 2016
Graz, Austria, October 18, 2016
Revised Selected Papers

Springer

Editors
Jürgen Großmann
Fraunhofer FOKUS CC SQC
Berlin
Germany

Fredrik Seehusen
SINTEF ICT
Oslo
Norway

Michael Felderer
Department of Computer Science
Universität Innsbruck
Innsbruck
Austria

ISSN 0302-9743 ISSN 1611-3349 (electronic)
Lecture Notes in Computer Science
ISBN 978-3-319-57857-6 ISBN 978-3-319-57858-3 (eBook)
DOI 10.1007/978-3-319-57858-3

Library of Congress Control Number: 2017938161

LNCS Sublibrary: SL2 – Programming and Software Engineering

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer International Publishing AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

Increased connectivity and software complexity lead to an ever-growing demand for techniques to ensure software quality, dependability, reliability, and security. The risks that software systems do not meet their intended level of quality can have a severe impact on vendors, customers, and even society at large. The precise understanding of risks has become one of the cornerstones of critical decision-making within complex social and technical environments.

Traditional approaches for ensuring system quality address risk implicitly rather than systematically. However, there is a growing interest in enhancing traditional approaches for ensuring system quality by taking risk systematically into account. For instance, in traditional test approaches, test planning and prioritization are often based on an implicit notion of risk; systems, functions, or modules, which are known to be critical, are tested more intensively than others. However, taking risk systematically into account allows for a more rigorous prioritization process that is better documented, less dependent on human guesswork, and more easily supported by tools.

The RISK Workshop series has emerged as a high-profile series of events that discusses innovative work in the areas of software risk assessment, testing, and the combination thereof. We have been able to look back on four successful years, in which we have been involved in different conferences and initiated a fruitful exchange between scientists from academia as well as from industry.

This volume contains the proceedings of the 4th International Workshop on Risk Assessment and Risk-Driven Quality Assurance (RISK 2016) held in October 2016 in Graz, Austria, in conjunction with the 28th International Conference on Testing Software and Systems (ICTSS). RISK 2016 brought together researchers from Europe who study, develop, and evaluate innovative techniques, tools, languages, and methods for risk assessment and risk-driven quality engineering. During the workshop, the participants discussed 11 peer-reviewed contributions tackling challenges of assessing and managing safety, security, and reliability risk, and in particular the intersection between these areas. The workshop was structured into three sessions on Security Risk Management, Security Risk Analysis as well as Risk-Based Testing.

We would like to take this opportunity to thank the people who have contributed to the RISK 2016 workshop and helped make it a success. We want to thank all authors and reviewers for their valuable contributions, and we wish them a successful continuation of their work in this area.

March 2017

Jürgen Großmann
Michael Felderer
Fredrik Seehusen

Organization

RISK 2016 was organized by Fraunhofer FOKUS, SINTEF Digital, and the University of Innsbruck.

Organizing Committee

Jürgen Großmann	Fraunhofer FOKUS, Germany
Michael Felderer	University of Innsbruck, Austria
Fredrik Seehusen	SINTEF Digital, Norway

Program Committee

Jürgen Großmann	Fraunhofer FOKUS, Germany
Fredrik Seehusen	SINTEF Digital, Norway
Michael Felderer	University of Innsbruck, Austria
Ina Schieferdecker	TU Berlin/Fraunhofer FOKUS, Germany
Ketil Stølen	SINTEF Digital, Norway
Ruth Breu	University of Innsbruck, Austria
Ron Kenett	KPA Ltd. and University of Turin, Italy
Sardar Muhammad Sulaman	Lund University, Sweden
Markus Schacher	KnowGravity Inc., Switzerland
Alessandra Bagnato	Softeam, France
Kenji Taguchi	AIST, Japan
Zhen Ru Dai	University of Applied Science Hamburg, Germany
Per Håkon Meland	SINTEF Digital, Norway
Luca Compagna	SAP Labs, France
Jörn Eichler	Fraunhofer AISEC, Germany
Bruno Legeard	Femto-ST, France
Xiaoying Bai	Tsinghua University, China

Contents