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Recent Trends in Algebraic Development Techniques

20th International Workshop, WADT 2010
Etelsen, Germany, July 1-4, 2010
Revised Selected Papers

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ISSN 0302-9743

e-ISSN 1611-3349

ISBN 978-3-642-28411-3

e-ISBN 978-3-642-28412-0

DOI 10.1007/978-3-642-28412-0

Springer Heidelberg Dordrecht London New York

Library of Congress Control Number: 2012931155

CR Subject Classification (1998): F.3, D.2.4, D.3.1, F.4, I.1, C.2.4

LNCS Sublibrary: SL 1 – Theoretical Computer Science and General Issues

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Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

This volume contains three invited papers and 15 selected papers from the 20th International Workshop on Algebraic Development Techniques (WADT 2010) which took place at Schloss Etelsen, a castle near Bremen, at the beginning of July 2010 (see also the picture on p. 16).

The algebraic approach to system specification encompasses many aspects of the formal design of software systems. Originally born as a formal method for reasoning about abstract data types, it now covers new specification frameworks and programming paradigms (such as object-oriented, aspect-oriented, agent-oriented, logic and higher-order functional programming) as well as a wide range of application areas (including information systems, concurrent, distributed and mobile systems). The workshop provided an opportunity to present recent and ongoing work, to meet colleagues, and to discuss new ideas and future trends. Typical topics of interest are:

- Foundations of algebraic specification
- Other approaches to formal specification including process calculi and models of concurrent, distributed and mobile computing
- Specification languages, methods, and environments
- Semantics of conceptual modeling methods and techniques
- Model-driven development
- Graph transformations, term rewriting and proof systems
- Integration of formal specification techniques
- Formal testing and quality assurance validation, and verification

The workshop took place under the auspices of IFIP WG 1.3 and was sponsored by the University of Bremen. The event was organized by the Computer Science Department of the University of Bremen and DFKI Bremen group Safe and Secure Cognitive Systems. The local organizers were Mihai Codrescu, Hans-Jörg Kreowski (Chair), Christian Maeder, Till Mossakowski (Chair), Sylvie Rauer, and Lutz Schröder.

The scientific program consisted of three invited talks by Hans-Dieter Ehrich, Jan Kofron, and Martin Wirsing and 32 presentations based on selected abstracts. After the workshop, all authors were invited to submit full papers, which underwent a thorough refereeing process, using EasyChair. Each paper was reviewed by three reviewers. We would like to thank both the Program Committee (PC) and the additional reviewers for their work. Special thanks go to José Luiz Fiadeiro, who on behalf of the PC Chairs handled the PC Chair function of EasyChair, in order to keep the reviewing process strictly anonymous to all authors. Moreover, we are very grateful to Alfred Hofmann and his team at Springer for the excellent cooperation once again.

As this was the 20th ADT Workshop, some reminiscing may be allowed. The workshop series started at Sorpesee (Germany) in 1982, and further events took place in Passau (Germany, 1983), Bremen (Germany, 1984), Braunschweig (Germany, 1986), Gullane (UK, 1987), Berlin (Germany, 1988), Wusterhausen (Germany, 1990), Dourdan (France, 1991), Caldes de Malavella (Spain, 1992), S. Margherita Ligure (Italy, 1994), Oslo (Norway, 1995), Tarquinia (Italy, 1997), Lisbon (Portugal, 1998), Château de Bonas (France, 1999), Genova (Italy, 2001), Frauenchiemsee (Germany, 2002), Barcelona (Spain, 2004), La Roche en Ardenne (Belgium, 2006), and Pisa (Italy, 2008). The 8th to 11th WADT events were held jointly with the COMPASS Workshops, the yearly meetings of the ESPRIT Basic Research Working Group A Comprehensive Algebraic Approach to System Specification and Development. Starting with the 12th WADT, the name was changed from Workshop on Abstract Data Types to Workshop on Algebraic Development Techniques while keeping the acronym. While the workshop series started as a regular meeting of the abstract data type community, it soon became clear that this was a too narrow objective. The new name reflects the widening scope and the broadening range of topics of the workshop. It should also be noted that the ADT workshops took place under the auspices of the IFIP Working Group 1.3 (Foundation of System Specifications) for nearly two decades. Since 2005, the CMCS and WADT communities have jointly organized the biannual conference CALCO together in turn with their ordinary workshops.

The first, second, fourth, and sixth proceedings appeared as technical reports, the third proceedings as Informatik-Fachberichte 116 under the title *Recent Trends in Data Type Specification*, the fifth volume and all proceedings from the seventh on were published as Springer Lecture Notes volumes (332, 534, 655, 785, 906, 1130, 1376, 1589, 1827, 2267, 2755, 3423, 4409, 5486). With the name of the workshop, the proceedings were renamed as *Recent Trends in Algebraic Development Techniques*.

Altogether, it is quite justified to call WADT an ongoing success story. Therefore we wish it at least 20 further editions.

October 2011

Till Mossakowski
Hans-Jörg Kreowski

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