Lecture Notes in Computer Science 6324

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

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Foundational and Practical Aspects of Resource Analysis

First International Workshop, FOPARA 2009
Eindhoven, The Netherlands, November 6, 2009
Revised Selected Papers

Springer

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Library of Congress Control Number: 2010933725

CR Subject Classification (1998): D.2, F.3, D.3, C.2, F.2, D.1

LNCS Sublibrary: SL 2 – Programming and Software Engineering

ISSN 0302-9743
ISBN-10 3-642-15330-5 Springer Berlin Heidelberg New York
ISBN-13 978-3-642-15330-3 Springer Berlin Heidelberg New York

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper 06/3180

Preface

The First International Workshop on FOundational and Practical Aspects of Resource Analysis (FOPARA) was initiated to serve as a forum for presenting original research results that are relevant to the analysis of resource (time, space) consumption by computer programs. FOPARA aimed to bring together the researchers working on foundational issues with the researchers focusing more on practical results. Therefore, both theoretical and practical contributions were encouraged. The contributions covered the following topics: resource analysis for embedded systems, logical and machine-independent characterizations of complexity classes, logics closely related to complexity classes, type systems for controlling complexity, semantic methods to analyze resources, including quasi- and sup-interpretations, practical applications of resource analysis, etc.

This first FOPARA brought two different groups of researchers together. In 2006 and 2008 informal application-oriented resource analysis workshops (an EmBounded Open Workshop in Budapest, 2006, and a Resource Analysis Workshop in Hertfordshire, 2008) were held as affiliated events of the International Symposium on the Implementation and Application of Functional Languages (IFL). Participants in these workshops were the University of St. Andrew (UK), Heriot-Watt University of Edinburgh (UK), Ludwig Maximilians University of Munich (Germany), Complutense University of Madrid (Spain) and the Polytechnical University of Madrid (Spain). Another group of researchers was active in the series of informal workshops on implicit computational complexity (see, for instance, WICC 2008 in Paris). That series gathers researchers working in theoretical foundations of resource analysis, mainly from France (universities of Paris Diderot and Paris Nord, LORIA Nancy), Italy (universities of Bologna and Turin), Norway, Germany and Portugal.

The FOPARA workshop was held as one of the workshops of FM 2009, the 16^{th} International Symposium on Formal Methods in Eindhoven, the Netherlands, November 2–6, 2009. It was a one-day workshop with 30 participants (2 from industry and 28 from academia) coming from Belgium, Canada, France, Italy, the Netherlands, Spain, the UK and the USA. There were 13 research presentation contributions and one invited lecture by Sumit Gulwani from Microsoft Research at Redmond, USA. During the workshop lively, inspiring discussions emerged between the more practical and the more theoretical researchers. After the workshop, the Program Committee reviewed the revised versions of the contributions and selected 10 papers for these proceedings.

It was decided at the first FOPARA workshop to create a regular series. The FOPARA workshop series aims to bring together research themes within resource analysis to address the broader resource-analysis community. The next FOPARA workshop will be held in May, 2011 in Madrid, Spain, co-located with the Trends in Functional Programming Symposium, TFP 2011.

We would like to thank the authors, the reviewers, the Program Committee, the workshop participants and the invited speaker for their valuable contributions to the success of the workshop and to creating these proceedings. Special thanks go to the Organizing Committee of the FM-week 2009 in Eindhoven and to Erik de Vink in particular.

June 2010

Marko van Eekelen
Olha Shkaravska

Organization

FOPARA 2009 was organized by the Computing and Information Science Department, Radboud University Nijmegen, in cooperation with the Department of Mathematics and Computer Science, Technical University of Eindhoven, as a satellite event of the 16th International Symposium on Formal Methods.

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Formal Methods Europe association, AHA project funded by the Netherlands Organisation for Scientific Research (NWO) under grant nr. 612.063.511, and the EU Artemis funded CHARTER project (nr. 100039).

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