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Recent Trends in Algebraic Development Techniques

12th International Workshop, WADT'97
Tarquinia, Italy, June 3-7, 1997
Selected Papers

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Series Editors

Gerhard Goos, Karlsruhe University, Germany
Juris Hartmanis, Cornell University, NY, USA
Jan van Leeuwen, Utrecht University, The Netherlands

Volume Editor

Francesco Parisi Presicce
DSI-Dipartimento di Scienze dell'Informazione
Universitá di Roma "La Sapienza"
Via Salaria 113, I-00198 Roma, Italy
E-mail: parisi@dsi.uniroma1.it

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Preface

Since the early 1970s, the algebraic specification of data types has been an important area of research which has provided foundations, methodologies, and tools for the formal development of software. The algebraic approach to the specification and development of systems, born as a formal method for abstract data types, encompasses today the formal design of integrated hardware and software systems, new specification frameworks, and a wide range of applications.

The 12th WADT Workshop on Algebraic Development Techniques was held in Tarquinia (approximately 100 km north of Rome) from June 3 to June 7 1997, and was organized by Francesco Parisi Presicce.

The main topics addressed during the workshop were:

- algebraic and other approaches to formal specifications
- algebraic structures and their logics
- specification languages and their associated methods and tools
- algebraic specification of concurrent systems
- term rewriting and theorem proving
- applications to reverse engineering, object systems, and compiler optimization.

The program consisted of 40 presentations describing ongoing research, three invited lectures by Hartmut Ehrig, José Meseguer, and Ugo Montanari surveying different topics and presenting recent results and direction for future work, and a tutorial by Peter D. Mosses on CoFI (Common Framework Initiative), part of a collaborative effort to design a Common Framework for Algebraic Specification and Development of Software (http://www.brics.dk/Projects/CoFI).

A Selection Committee consisting of

Egidio Astesiano, Michel Bidoit, Hartmut Ehrig, Hans-Jörg Kreowski, José Meseguer, Ugo Montanari, Fernando Orejas, Peter D. Mosses, Francesco Parisi Presicce, Don T. Sannella, Andrzej Tarlecki, and Martin Wirsing

selected a number of papers based on the abstracts and the presentations at the workshop and invited their authors to submit a written version of their talks for possible publication in the proceedings. All the submissions underwent a careful refereeing process and were discussed (by e-mail) by the Selection Committee during a final acceptance/rejection round. This volume contains the final versions of the 21 accepted papers and the written versions of the three invited lectures.

We are very grateful to all the workshop participants, to the members of the Selection Committee, and to the following (additional) referees:

M. Cerioli, A. Corradini, M. Gogolla, B. Graves, M. Große-Rhode, J. E. Hannay, R. Heckel, B. Jacobs, C. Kirchner, A. Labella, N. Marti-Oliet, E. Moggi, T. Mossakowski, O. Owe, P. Padawitz, J. Padberg, W. Pawłowski, A. Pierantonio, A. Piperno, G. Reggio, J. J .M .M. Rutten, M. Simeoni, U. Wolter

for their contribution to the scientific quality of the workshop and of these proceedings.

We also wish to thank M. Boreale, S. De Simoni, M. Große-Rhode, A. Pierantonio, A. Piperno and M. Simeoni for their invaluable help in the organization before, during and after the workshop, and Springer-Verlag for agreeing to publish this volume.

The Workshop was sponsored by the Dipartimento di Scienze dell'Informazione of the Universitá di Roma La Sapienza and received financial support from the Consiglio Nazionale delle Ricerche through GNIM (Gruppo Nazionale per l'Informatica Matematica) and the Comitato Nazionale Scienza e Tecnologia dell'Informazione and the Comitato Nazionale per le Scienze di Ingegneria ed Architettura.

January 1998 Francesco Parisi Presicce

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