

Foreword to Special issue

Citation for published version (APA):

Brand, van den, M. G. J., & Verma, R. M. (2001). Foreword to Special issue. In *RULE 2001 (Second International Workshop on Rule-Based Programming, Firenze, Italy, September 4, 2001)* (Electronic Notes in Theoretical Computer Science; Vol. 59, No. 4). [https://doi.org/10.1016/S1571-0661\(05\)80559-6](https://doi.org/10.1016/S1571-0661(05)80559-6)

Document license:

CC BY-NC-ND

DOI:

[10.1016/S1571-0661\(05\)80559-6](https://doi.org/10.1016/S1571-0661(05)80559-6)

Document status and date:

Published: 01/01/2001

Document Version:

Publisher's PDF, also known as Version of Record (includes final page, issue and volume numbers)

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.tue.nl/taverne

Take down policy

If you believe that this document breaches copyright please contact us at:

openaccess@tue.nl

providing details and we will investigate your claim.



Preface

Volume 59, Issue 4

Mark van den Brand and Rakesh Verma

Abstract

Foreword This volume contains the *Proceedings* of the Second International Workshop on Rule-Based Programming (RULE2001). The Workshop was held in Firenze, Italy on September 4, 2001, as satellite event to PLI2001.

This is the second edition of the International Workshop on Rule-Based Programming (RULE'2001). We aim with this workshop at a fruitful cross fertilization of the theoretical foundations of rule-based programming with practical applications and implementation of rule-based systems. We are very pleased with the broad range of papers: quite a number of very theoretical ones upto papers describing a system and a paper describing a comparison between a number of rule-based systems to tackle a bio-medical problem.

Rule-based programming began with AI rule-based systems in the seventies. This paradigm is inherent in Prolog and has been used in program-manipulation systems like Refine. Indeed, the rewriting concept appears throughout computer science, from its theoretical foundations to very practical implementations. Extreme examples include the mail system in Unix which uses rules in order to rewrite mail addresses to canonical forms and the transition rules describing the behaviour of tree automata. Rewriting is used in semantics in order to describe the meaning of programming languages, as well as in program transformations like the re-engineering of Cobol programs. It is used to compute, implicitly or explicitly, as in Mathematica or OBJ, but also to perform deduction when using inference rules to describe a logic, theorem prover or constraint solver. Last, but not least, this approach is central to systems that raise the notion of rule to an explicit first class object, like expert systems, programming languages based on equational logic, algebraic specifications (e.g. OBJ), functional programming (e.g. ML) and transition systems (e.g. Murphi).

Rule-based programming is currently experiencing a renewed period of growth with the emergence of new concepts and systems that allow one to better understand and better use it. From the theoretical side, after the in-depth study of rewriting concepts during the eighties, the nineties saw the emergence of the general concepts of rewriting logic and of the rewriting calculus. On the practical side, new languages, like ASM, ASF+SDF, Claire, ELAN and Maude, systems like LRR, and also commercial products, like Ilog Rules, have shown that the concept of rule could be of major interest as a programming tool. In particular, because it is now of practical use, fundamental questions arise, like the theoretical study of the algorithmic complexity of programs written in such languages, as well as their optimisation. Of course, semantics of such languages, compilation techniques and methodological studies of their use should also be explored.

Rule based programming is closely related to both functional programming (when the term rewrite system is confluent and terminating) as well as classical logic programming (when the rewrite system is used for nondeterministic search).

Accordingly, the purpose of this workshop is to bring together researchers from these various domains to foster fertilisation between theory and practice, as well as to favour the growth of this programming paradigm.

Mark van den Brand
(*CWI Amsterdam*)
Iliano Cervesato
(*ITT Industries*)
Nachum Dershowitz
(*Tel-Aviv University*)
Bernd Fischer
(*RIACS/NASA Ames, Moffett Field*)
Claude Kirchner
(*LORIA Nancy*)
Jean-Yves Marion
(*LORIA Nancy*)
Narciso Marti-Oliet
(*Universidad Complutense de Madrid*)
Rakesh M. Verma
(*University of Houston*)
Eelco Visser
(*Utrecht University*)

This volume will be published as volume 44-2 in the series *Electronic Notes in Theoretical Computer Science* (ENTCS). This series is published electronically through the facilities of Elsevier Science B.V. and its auspices. The volumes in the ENTCS series can be accessed at the URL

We would like to thank the program committee members for their help in evaluating the papers and making a scientifically interesting selection. Furthermore, we would like to thank the `{\bf PLI}` organizing committee for taking care of the local organization of our workshop. We thank the ACM organization for sponsoring this workshop. We thank Elsevier for publishing these proceedings in the *Electronic Notes in Theoretical Computer Science* (ENTCS). Finally, we thank Professor Michael Mislove for providing and adapting the style files for ENTCS.

November, 2001 Mark van den Brand and Rakesh M. Verma
