Third ACM SIGPLAN
Workshop on Rule-Based Programming

Satellite event of PLI'02
Saturday, October 5, 2002, Pittsburgh, USA

`http://www.program-transformation.org/RULE`

The rule-based programming paradigm is characterized by the repeated, localized transformation of a shared data object such as a term, graph, proof, or constraint store. The transformations are described by *rules* which separate the description of the sub-object to be replaced (the *pattern*) from the calculation of the replacement. Optionally, rules can have further conditions that restrict their applicability. The transformations are controlled by explicit or implicit *strategies*.

The basic concepts of rule-based programming appear throughout computer science, from theoretical foundations to practical implementations. Term rewriting is used in semantics in order to describe the meaning of programming languages, as well as in the implementation of program transformation systems. It is used implicitly or explicitly to perform computations, e.g., in Mathematica, OBJ, or ELAN, or to perform deductions, e.g., by using inference rules to describe or implement a logic, theorem prover or constraint solver. Extreme examples of rule-based programming include the mail system in Unix which uses rules in order to rewrite mail addresses to canonical forms, or the transition rules used in model checkers.

Rule-based programming is currently experiencing a renewed period of growth with the emergence of new concepts and systems that allow a better understanding and better usability. On 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 such as ASM, ASF+SDF, BURG, Claire, ELAN, Maude, and Stratego, new systems such as LRR and commercial products such as Ilog Rules and Eclipse have shown that rules are a useful programming tool.

The practical application of rule-based programming prompts research into the algorithmic complexity and optimization of rule-based programs as well as into the expressivity, semantics and implementation of rules-based languages. Here, a particular focus is the use and specific ation of strategies as a high-level control flow concept for the application of the rules.

The purpose of this workshop is to bring together researchers from the various communities working on rule-based programming to foster fertilisation between theory and practice, as well as to favour the growth of this programming paradigm.

Topics We solicit original papers on all topics of rule-based programming, including but not restricted to

- Languages for rule-based programming
    - Expressivity and semantics
    - Implementation techniques
- Applications of rule-based programming
    - Analysis of rule-based programs
    - Programming methods
- Environments for rule-based programming
    - (Partial) Evaluation
    - Abstract machines for rewriting
- Combination of rule-based programming with other paradigms
- System descriptions

Invited Speaker Todd Proebsting (Microsoft Research): *BURG, IBURG, WBURG, GBURG: So Many Trees to Rewrite, So Little Time*

Submission Papers should not exceed 12 pages in length, including figures, references, and appendices; authors should use at least a 10pt style. Accepted papers will be published by ACM and will become part of the ACM Digital Library. For submission, a single self-contained .ps-file or .pdf-file should be emailed to the program co-chairs

- Bernd Fischer (fisch@email.arc.nasa.gov)
- Eelco Visser (visser@cs.uu.nl)

no later than June 3, 2002. Please make sure the files print on standard printers - garbled submissions will not be reviewed!

Important Dates

- Submission: June 3, 2002
- Notification: August 19, 2002
- Final version: September 15, 2002
- Workshop: October 5, 2002

Program Committee Bernd Fischer (Co-Chair), Eelco Visser (Co-Chair), Mark van den Brand, James Cordy, Francois Fages, Thom Fruehwirth, Claude Kirchner, Herbert Kuchen, Mark Minas, Oege de Moor