Fourth International Workshop on Reduction Strategies in Rewriting and Programming (WRS 2004)
http://www-i2.informatik.rwth-aachen.de/WRS04/
associated to the Federated Conference on Rewriting, Deduction, and Programming, RDP 2004
Aachen, Germany, June 2, 2004

PRELIMINARY CALL FOR PAPERS AND PARTICIPATION

Workshop Co-chairs
Sergio Antoy Portland (USA)
Yoshihito Toyama Sendai (Japan)

Program Committee
Sergio Antoy Portland (USA)
Roberto Di Cosmo Paris VII (France)
Jürgen Giesl Aachen (Germany)
Bernhard Gramlich Wien (Austria)
Salvador Lucas Valencia (Spain)
Aart Middeldorp Innsbruck (Austria)
Jaco van de Pol Amsterdam (The Netherlands)
Pierre Réty Orléans (France)
Amr Sabry Bloomington (USA)
Yoshihito Toyama Sendai (Japan)

Invited Speakers
Olivier Danvy (University of Aarhus, Denmark)
Normalization by Evaluation
Jan Willem Klop (Vrije Universiteit Amsterdam, The Netherlands)
Reduction Cycles

Important Dates
Submission: March 17, 2004
Notification: April 14, 2004
Final versions: May 2, 2004
Workshop: June 2, 2004

Background and Aims: Reduction strategies in rewriting and programming continue to attract attention. As new strategies are discovered and investigated, new results on rewriting/computation under particular strategies become available. A number of programming languages and systems permit the explicit definition or modification of the computational reduction strategy (e.g., Elan, Maude, "OBJ", Stratego in the first case; Clean, Curry, and Haskell in the second one). Research in this field ranges from primarily theoretical questions about reduction strategies to very practical application and implementation issues. The need for a deeper understanding of reduction strategies in rewriting and programming, both in theory and practice, is obvious, since they bridge the gap between unrestricted general rewriting (computation) and (more deterministic) rewriting with particular strategies (programming). Moreover, reduction strategies bridge investigations of operational principles (e.g., graph and term rewriting, narrowing, lambda-calculus) and semantics (e.g., normalization, computation of values, infinitary normalization, head-normalization) with implementations of programming languages.

The workshop provides a forum for presenting and discussing new ideas and results, recent developments, new research directions, as well as surveys on existing knowledge in this area. Furthermore we aim at fostering interaction and exchange between researchers and students actively working on such topics. The workshop is (co-)organized by Portland State University and Tohoku University.

Topics of Interest include, but are not restricted to,
- theoretical foundations for the definition and semantic description of reduction strategies
- strategies in different frameworks (term rewriting, graph rewriting, infinitary rewriting, lambda calculi, higher order rewriting, conditional rewriting, rewriting with built-ins, narrowing, constraint solving, etc.) and their application in programming (languages)
- properties of reduction strategies/computations under strategies (e.g., completeness, computability, decidability, complexity, optimality, (hyper-)normalization, cofinality, fairness, perpetuality, context-freeness, neededness, laziness, eagerness, strictness)
- interrelations, combinations and applications of reduction under different strategies (e.g., evaluation mechanisms in programming languages, equivalence conditions for fundamental properties like termination and confluence, applications in modularity analysis, connections between strategies of different frameworks, etc.)
- program analysis and other semantics-based optimization techniques dealing with reduction strategies
- rewrite systems/tools/implementations with flexible/programmable strategies as essential concept/ingredient
- specification of reduction strategies in (real) languages
- tutorials and systems related to evaluation strategies

Submissions: We solicit papers on all aspects of reduction strategies in rewriting and programming. Submissions should describe unpublished work, except for survey papers which are explicitly welcome, too. Submissions should not exceed 10 pages (however, survey papers may be longer) and be sent in PostScript or PDF format to the PC co-chairs at (wrs04@redstar.cs.pdx.edu) by March 17, 2004. The use of the style file available from the workshop homepage is encouraged. Submissions should include the title, authors’ names, affiliations, addresses, and e-mail. Selection of papers by the PC will be based on originality, significance, and correctness. Final versions will be due by May 2, 2004.

Publication: Accepted papers will be included in the preliminary workshop proceedings that will be available at the workshop. The final workshop proceedings will be published in Elsevier’s Electronic Notes in Theoretical Computer Science (ENTCS) series.