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Preface

Partial Evaluation and Program Transformation Day

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This special issue of *New Generation Computing* contains five, fully reviewed papers presented at the *Partial Evaluation and Program Transformation Day* held at Waseda University, Tokyo, November 15, 1999. This one-day colloquium featured talks and discussions on semantics-based program transformation with an emphasis on program specialization, generalized partial computation, and automatic program transformation.

The contributions in this special issue represent state-of-the-art research ranging from theoretical works to practical studies, and across different programming language paradigms (functional, logic, object-oriented). They are arranged alphabetically. Here is a brief summary of the contributions:

- Elvira Albert and Germán Vidal. *The Narrowing-Driven Approach to Functional Logic Program Specialization.* Surveys the state-of-the-art of narrowing-driven partial evaluation of functional-logic programs.
- Kenichi Asai. *Binding-Time Analysis for Both Static and Dynamic Expressions.* Presents a novel binding-time analyzer for a functional language and proves the correctness of the constraint solving algorithm.
- Olivier Danvy, Bernd Grobauer, and Morten Rhiger. *A Unifying Approach to Goal-Directed Evaluation.* Addresses the challenge of implementing goal-directed evaluation using computational monads and partial evaluation.
- Yoshihiko Futamura, Zenjiro Konishi, and Robert Glück. *Automatic Program Transformation System Based on Generalized Partial Computation.* Discusses the power of a program transformation system utilizing a theorem prover and a partial evaluator.
- Hidehiko Masuhara and Akinori Yonezawa. *A Portable Approach to Dynamic*

Optimization in Run-time Specialization. Proposes a run-time bytecode specialization technique for the Java virtual machine language.

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