Parallel Logic Programming Systems

Proceedings of the Post-ILPS’95 Workshop on Parallel Logic Programming Systems, Portland, Oregon, USA, December 8, 1995

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Workshop Programme

9:00 – *Distributed Execution in Functional Logic Programming*, by W. Hans, S. Winkler, RWTH Aachen, Germany and F. Saenz, Univ. Complutense de Madrid, Spain

9:30 – *A Generational Parallel Copying Garbage Collector for Shared Memory Prolog*, by Johan Bevemyr, Uppsala University, Sweden

10:00 – *Contribution to the Semantics of a Data-Parallel Logic Programming Language*, by A. Lallouet (Univ. d’Orleans) and Y. le Guyadec (IUT Vannes), France

10:30 – Break

11:00 – *Improving Distributed Unification through Type Analysis*, by Evelina Lamma, Paola Mello, Cesare Stefanelli – DEIS, Univ. di Bologna, Italy, and Pascal Van Hentenryck – Brown University, USA


12:00 – Lunch

14:00 – *The Sparse Binding Array Approach to Parallelism in Logic Programs*, by Vitor Santos Costa, M. Eduardo Correia e Fernando Silva, LIACC, Universidade do Porto, Portugal

14:30 – *And/Or Parallelism in ACE (a progress report)*, by Enrico Pontelli and Gopal Gupta, New Mexico State University, USA

15:00 – *A Model for Tabulation in And-Or Tree Rewriting Systems*, by Carlos Damasio and Salvador Abreu, Univ. Nova Lisboa, Portugal

15:30 – Break

16:00 – *AM2: An AND/OR Parallel Prolog Simulator*, by Luiz Monnerat and Inês Dutra, COPPE/Sistemas, Univ. Federal do Rio de Janeiro, Brasil

16:30 – *Modelling and Redesigning the Advanced Traffic Management System in Andorra-I*, by Josef Hasenberger, University of Bristol, United Kingdom

Each talk will have approximately 20 minutes for presentation, plus 10 minutes for informal discussion.
Introduction

This document includes all accepted articles submitted to the Post Conference Workshop on Parallel Logic Programming Systems that followed the International Symposium on Logic Programming in Portland, December 1995.

Parallel implementations are one of the main areas of research in parallel logic programming. This research goes broadly from the design and specification of execution models to the actual implementation and use of parallel systems in real life situations.

Parallel logic programming systems such as Aurora, Muse, KL1, Parallel Parlog, &-Prolog or Andorra-I have been quite successful at obtaining good speedups for non-trivial applications. Some of these systems, such as Muse, are now reaching mainstream logic programming systems. On the other hand, research continues strong on integrating multiple forms of parallelism into more general frameworks, with very interesting results having being obtained so far.

Parallel logic programming systems also pose important challenges on several related technologies, such as Compilation, Operating System Design, or Parallel and Distributed Algorithms. For instance, the application of novel compilation techniques to these systems make it possible to significantly reduce overheads and generally improve performance.

The goal for the workshop was therefore to be a meeting point for the several strands of the very important research going on in the area. The workshop will fully cover this subject, including:

- Execution Models for Parallel Logic Programming
- Programming Languages for Parallel Logic Programming Systems
- Parallel Implementations of Logic Programming Systems
- Scheduling for Parallel Logic Programming Systems
- Compilation Techniques for Logic Programming Systems
- Distributed Logic Programming Systems
- Parallel Logic Programming in the Real World

The workshop organizers would like to thank all authors that chose to submit their work to this workshop, and also for their cooperation in making this document possible.

Organizers:

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