Preface

HIPS'97, held in conjunction with the 11th International Parallel Processing Symposium in Geneva, Switzerland, was the second in a series of workshops on “High-Level Parallel Programming Models and Supportive Environments.” It provided a forum for researchers from industry and academia to discuss recent developments and results on one of the prevailing themes of parallel programming: the design of parallel programming models and languages that (1) are at a high conceptual level, providing more convenience and productivity to the programmer than message-passing models, and that (2) can be implemented efficiently and supported by powerful tools, so that truly high-performance parallel code can be produced by the programming system and the programmer.

Forty-five submitted research papers demonstrate the vivid interest in, and the relevance of, the workshop theme. From these, 16 high-quality papers were selected for presentation at the one-day workshop and for publication in these proceedings (10 regular, 6 short papers). The workshop was decided to be focused on practical and implementation aspects of high-level programming models so that some excellent papers on automatic parallelization techniques had unfortunately to be ruled out this year.

An invited talk by Helmar Butkhart, University of Basel, Switzerland, entitled “High-Level Parallel Programming: Methods, Languages, and Tools” gave a comprehensive overview of the state of the art of the field. An interesting investigation on the benefits (in terms of reduced software complexity) and costs (in terms of performance) of high-level parallel programming, as compared to message passing, completed Session 1.

Session 2 was devoted primarily to concurrent object-oriented programming. Both language design aspects and implementation and efficiency issues were addressed by the three papers.

In Session 3, data parallel and cellular programming was discussed, demonstrating the relative maturity of the approach and of supporting tools, but also addressing the deficiencies of the data-parallel style on irregular problems.

Session 4 covered performance aspects and tools, with an emphasis on load balancing of high-level parallel programs (HPF and an object-oriented model). In addition, a novel rule-based approach for detecting performance bottlenecks in SVM programs was introduced.

Finally, the short papers presented in Session 5 demonstrated part of the wide spectrum of approaches to high-level parallel programming that are currently being designed and implemented (and partially tried out on real-world programs).

In summary, the diverse collection of papers made up for an interesting and stimulating workshop and once again provided evidence that high-level parallel programming is still a widely open and active research topic. Thus, this series of workshops will certainly be continued (in conjunction with IPPS) in the years to come.

I thank all the researchers for their contributions to the workshop and the Program Committee members and reviewers for their time and expertise, which helped to make HIPS'97 become reality and a successful event. The effort of the Organizing Committee and the 11th International Parallel Processing Symposium is also gratefully acknowledged.

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