

Foreword

It gives us great pleasure to welcome you to the 14th IEEE Symposium on Computer Arithmetic, held in Adelaide, Australia, April 14 – 16, 1999.

The technical program includes 31 papers with authors representing 13 countries. The program also includes an invited talk and a panel discussion. We hope that you will find this year's program a continuation of the previous ARITH meetings' tradition of excellence.

Since 1969, the ARITH symposia have served as the primary forum for presenting scientific work on computer arithmetic, number systems and the implementation of arithmetic processing components. Since 1981, the symposium has been a biannual event, alternating between North America and Europe.

Now, for the first time, it is being held outside these two continents, truly reflecting the international scope of the computer arithmetic community.

Despite a long history of constant developments, there is a considerable effort going on in improving algorithms and implementations of the basic arithmetic operations and the rounding of results, in striving for ever faster execution. Division, in particular, remains the subject of continuous effort in research and development, but recently, the demands of multimedia have spurred interest in related operations like reciprocals and root reciprocals.

Alternative number systems like logarithmic and residue systems are being improved upon, and fundamental questions on the representation of numbers are still being raised and analyzed. Floating-point processors remain a significant application, but the fundamental arithmetic algorithms also play a major role in all kinds of computing — intensive applications, such as digital signal processing and cryptography.

The 31 papers included in these proceedings were selected out of 67 manuscripts submitted to ARITH-14. The submission of manuscripts and their review process were done electronically through the Internet, allowing faster and more efficient processing and a better match between the submitted papers and the reviewers' fields of expertise. Each manuscript was reviewed by three to six referees. Most reviews were done by the 37 members of the Program Committee, but some were solicited from external reviewers.

The papers included in these proceedings were selected by 27 members of the Program Committee from nine countries who participated in a meeting held in Boston in early November, 1998.

The success of a technical meeting such as this depends on the contribution and involvement of many individuals. First and foremost, we would like to thank all the authors who submitted their work to this symposium. We would also like to express our gratitude to the members of the Program Committee and the external reviewers, who contributed so much of their time and provided in-depth reviews of the papers.

We also wish to acknowledge the efforts of Steve Morin, who developed all of the web-based forms for administering the technical program. Finally, we wish to express our appreciation for the support and organizational framework provided by Neil Burgess and Jean-Michel Muller and by the IEEE and the IEEE Computer Society.

Israel Koren and Peter Kornerup
Program Chairs