

Preface

AMAST's goal is to advance awareness of algebraic and logical methodology as part of the fundamental basis of software technology. Ten years and seven conferences after the start of the AMAST movement, I believe we are attaining this. The movement has propagated throughout the world, assembling many enthusiastic specialists who have participated not only in the conferences, which are now annual, but also in the innumerable other activities that AMAST promotes and supports.

We are now facing the Seventh International Conference on Algebraic Methodology and Software Technology (AMAST'98). The previous meetings were held in Iowa City, USA (1989 and 1991), in Enschede, The Netherlands (1993), in Montreal, Canada (1995), in Munich, Germany (1996), and in Sydney, Australia (1997). This time it is Brazil's turn, in a very special part of this colorful country – Amazonia.

Thus, “if we have done more it is by standing on the shoulders of giants.” The effort started by Teodor Rus, Arthur Fleck, and William A. Kirk at AMAST'89 was consolidated in AMAST'91 by Teodor Rus, Maurice Nivat, Charles Rattray, and Giuseppe Scollo. Then came modular construction of the building, wonderfully carried out by Giuseppe Scollo, Vangalur Alagar, Martin Wirsing, and Michael Johnson, as Program Chairs of the AMAST conferences held between 1993 and 1997. Beside the conferences, a number of AMAST Workshops have been held around the world; four on real-time systems, organized by Teodor Rus, by Didier Begay, by Aurel Cornel, and by Miguel Bertran; one on topology completion in semantics organized by Maurice Nivat, Paul Gastin, and Jan Rutten; and one on algebraic processing of programming languages, organized by Anton Nijholt, Maurice Nivat, and Giuseppe Scollo. The fifth workshop on real-time systems will be held in 1999, organized by Joost-Pieter Katoen at the University of Erlangen, Germany. The mortar for this huge structure was provided by the inspiring tutelage of our General Chair, Maurice Nivat, and the vision of the AMAST Steering Committee constituted by Egidio Astesiano, Robert Berwick, Zohar Manna, Michael Mislove, Anton Nijholt, Maurice Nivat, Jacques Printz, Charles Rattray, Teodor Rus, Giuseppe Scollo, John Staples, Jeannette Wing, and Martin Wirsing.

For AMAST'98, in response to the call for papers, 80 papers and three system demonstrations were submitted. After a strict selection process, 29 papers were chosen for presentation. These, along with the extended abstracts of six invited papers and succinct descriptions of the demonstrations, make up these proceedings.

The number of papers accepted by no means indicates the full scope of papers with the necessary quality for presentation and publication. It reflects only the time restrictions imposed by a four-day conference.

The publication of a special number of Theoretical Computer Science (TCS) with revised versions of the best papers is a tradition of the AMAST conferences. As Martin Wirsing stated in the preface to the AMAST'96 proceedings, “An eventual goal is to establish algebraic and logical methodology as a practically viable and attractive alternative to the prevailing ad hoc approaches to software engineering.” In AMAST'97 this trend was obvious, and we had a handful of very good papers on software engineering applications. Thus, it has been decided that this time two special issues will be published, one in TCS with the best theoretically oriented papers, and another in Software Architecture (the journal heir to Science of Computing

Programming) with the best application oriented papers. The full versions of the invited papers will also appear in these special issues.

The six distinguished invited speakers of AMAST'98 are Zhou Chaochen, Thomas Maibaum, Zohar Manna, Don Pigozzi, Glynn Winskel, and Pamela Zave.

As in the previous years, the first day of AMAST'98 will be an Education Day, this time coordinated by Carlos Camarão de Figueiredo. Formal methods training experiences will be presented and discussed.

On behalf of the Program Committee, my thanks to all who submitted papers and system demonstrations, and to the invited speakers for their contributions. We also extend very special thanks to the referees for sharing with us the difficult task of reviewing the set of very good papers received, and giving us assistance in choosing those that should be accepted.

Our gratitude goes to Springer-Verlag for their invaluable cooperation, as always, regarding the edition and publication of these proceedings.

A very special acknowledgement must be made to Edjard de Souza Motta and the *Departamento de Ciência da Computação* of *Universidade do Amazonas*, whose enthusiastic collaboration greatly facilitated the innumerable local organization tasks.

The support of CNPq – *Conselho Nacional de Desenvolvimento Científico e Tecnológico*, of FINEP – *Financiadora de Estudos e Projetos*, and of UNU/IIST – International Institute for Software Technology of the United Nations University, is gratefully acknowledged.

I give personal thanks to the Program Committee for their intense labor during the organization and reviewing process, to José Meseguer for allowing us the use of SRI International facilities for the Program Committee Meeting, and to José Fiadeiro for splendidly organizing the meeting. I would also like to thank Marcelo Frias for his work during the first stretch of the organization job.

I have a very special debt of gratitude, to add to an endless list that I shall never be able to pay off, to my collaborators at the Laboratory of Formal Methods: first, to our Márcia Ferreira, formally Chair of AMAST'98 Organizing Committee, but actually organize-and-do-everything-that's-needed; then to Christiano Braga, Daniela Cardoso, André Carregal, Cassio Gondim, Fernanda Mesquita, Cláudio Terra Prates, and all the others who pitched in when necessary.

November 1998

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Program Chair: Armando Haebeler

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Referees

In addition to the members of the Program Committee, external referees reviewed all submitted papers, helping in their selection amongst the many excellent submissions received.

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