

THE FIFTH GENERATION CHALLENGE

Editors:

R. L. Muller and J. J. Pottmeyer



Association for Computing Machinery



NORTH-HOLLAND

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Proceedings of the Association for Computing Machinery 1984 Annual Conference (ACM '84)
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Edited by

R. L. MULLER

and

J. J. POTTMYER



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Preface

As you will see when you read through these *Proceedings*, a number of intellectually substantial papers are included. This did not happen by accident. It occurred because many computer professionals are willing to share freely the fruits of their efforts with their peers—and because the authors knew that a highly qualified body of referees had volunteered to ensure the professional integrity of this publication. Yet, this pool of talented and well intentioned people would not have coalesced into the effective group it became were it not for the tremendous contribution of time and energy by the program chair, Alex Roth, the program vice chair, Bob Mikelskas, and the managing editor of the *Proceedings*, Jim Pottmyer. For me, it has been a delightful introduction into the mysteries of organizing an international conference.

Reading through this set of papers and abstracts has been another delight, to be exceeded only by attendance at the conference itself. As a quick glance at the table of contents reveals, these *Proceedings* provide a broad treatment of the topic. For instance, Carl Hammer provides a panoramic perspective of electronic computing; parallelism in programming languages and operating systems is covered in several papers; knowledge based systems are treated in several others; automated software at requirements and code levels is addressed; logic beyond Boole is dealt with in several papers; and one paper argues forcefully that new technology is not even needed to meet some of the expressed goals of the Fifth Generation of computer technology. Finally, the international scope of the ACM is reflected by excellent contributions from associates in Europe, Canada, Israel, and Japan.

The *Proceedings* provide a rich collection of material. I am pleased to have played a small part in bringing them to you. As vice chair of ACM's Washington, D.C. Chapter, I have the good fortune to help continue to explore aspects of this topic. The Chapter's 24th Annual Technical Symposium next June will be devoted to AI's current practice and future approaches.

— RICHARD L. MULLER
Editor

About These *Proceedings*

Ideally a proceedings serves many functions. The book, of course, contains the refereed papers accepted for the conference. About two thirds of the pages in the body of these proceedings are used to publish the refereed papers.

As a publication medium for papers, a conference proceedings offers a more ready forum for new ideas than journals. On the negative side, most proceedings find their way only into the hands of conference attendees. There is not much "after market" for proceedings. So, conference proceedings can attract high quality papers only if the conference is likely to attract everyone who "counts." The large number of first-rate papers in these *Proceedings* is an obvious vote of confidence in ACM'84 by the authors.

Of the remaining third of the pages, about half are devoted to invited papers, summaries, and abstracts which have some "technical meat." The rest of the pages are overhead for keeping a record of what is intended to be presented — short abstracts or summaries merely outlining topics to be covered and even simpler lists of program participants. We confess that this record of the intended program is incomplete. As the deadline came for sending these *Proceedings* to the printer in late July, there were major areas within the program (going to press in final form a couple of weeks later) where the energetic Program Committee was still defining the program content.

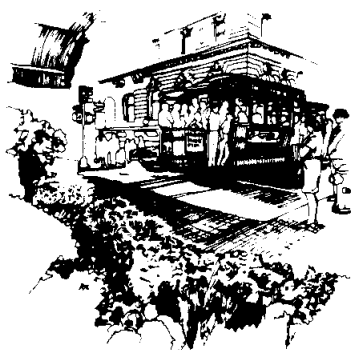
You are, therefore, cautioned to use your program brochure as well as this book as your record of what went on at ACM'84. The many outstanding panels that will be presented would have to be foregone if proceedings publication deadlines dictated program content.

The Table of Contents does not reflect the whole program. It simply lists those papers, abstracts, and summaries contained here. A person's name is listed if we had some words from his or her own pen/word-processor, together with a copyright form. Within the body of the *Proceedings*, there are lists for various sessions of all known participants as of the end of July 1984. In the back of the book, there is an alphabetic listing of all authors, session chairs, panelists, and committee people mentioned herein.

In processing the camera-ready copy for this book, I noticed that many computer professionals are in incomplete control of their machines. Hardly anyone could coerce a word processor into following the suggested style sheet to the letter. Also, whenever a problem arose (fuzzy laser print, copy mangled by the postal service, ridiculous formatting), my usual invitation was: send me garden-variety ASCII graphic characters, with an offer to insert markup codes and format and retype things on my end. Over half of such invitations could not be accepted — authors could not recover simple character strings from their office automation.

It is most fitting that this conference includes a session on publication technology (see page 305).

— JAMES J. POTTMYER
Managing Editor



Powell Street

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