PROCEEDINGS

Proceedings of the 1995 ACM/IEEE Supercomputing Conference

San Diego, California, USA
December 3 through 8, 1995

The SC'95 Proceedings

Welcome to the *Proceedings of the 1995 ACM/IEEE Supercomputing Conference*

Several indices into the SC'95 Proceedings are available:

SC'95 TOCs: By SESSION

A listing of invited speakers, papers, panels, and workshops by conference session

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An index by keywords to all technical and education papers

To facilitate your navigation through the *SC'95 Proceedings*, the buttons that appear above also appear across the top of each technical paper and in each invited speaker, panel, or workshop write-up.

Virtual Environments and Distributed Computing at SC'95

The document Virtual Environments and Distributed Computing at SC'95 HPC Challenge Applications on the I-WAY, a catalog of GII testbed and HPC challenge applications on the I-WAY, is also available on this CD-ROM.

Credit where credit is due...

SC'95 was made possible only through the work of many volunteers, including the members of the various SC'95 committees. The committees wish to thank the reviewers for the part they played in ensuring the quality of the technical program.

Supercomputing'96 Call for Participation

The SC'96 committees solicit your participation in Supercomputing'96 at the David Lawrence Convention Center in Pittsburgh.

About This CD-ROM

Software: You will be able to read these proceedings directly from this CD-ROM if the following software is installed on your system:

- A recent release of a major World Wide Web browser
- Adobe Acrobar Reader 2.0 or later
- A JPEG viewer, either as a separate application or built into your Web browser
- An MPEG player

If the above software is not already installed, applications are included on this CD-ROM for most platforms. See the printed booklet and the README files on the disc.

If necessary, errata will be available on the World Wide Web. A Web-based version of these proceedings will also be available.

This CD-ROM was created through the efforts of many people at several institutions. It would not have been possible without all of their support.

A few of the PDF papers on this CD-ROM are difficult to read on the monitor unless you set the enlargement ratio to 150% or more in the Acrobat Reader. These papers print quite clearly, however.

Introduction to the SC'95 Proceedings

A Welcome from the Conference Chair

It is my pleasure to present this collection of papers from Supercomputing '95 (SC'95), the eighth annual conference and exhibition on High Performance Computing and Communications. Since 1988, volunteers from academia, government, and industry have been working together to advance the application of computing and communications technologies by organizing this conference. SC'95 is sponsored by the Association for Computing Machinery (ACM) Special Interest Group on Computer Architecture (SIGARCH) and the IEEE Computer Society Technical Committees on Supercomputing Applications and Computer Architecture. This year's conference in San Diego, California, is an unqualified success, with a strong technical program of presentations, workshops, and roundtable discussions, and a fascinating exposition of vendor and research exhibits (most with interactive and WWW-based presentations) on new research,

applications, and services of interest to the HPCC community. The conference is significantly enhanced by participation in the Information Wide Area Year (I-WAY), an experimental, high performance network linking dozens of the nation's fastest computers, advanced visualization environments, and national research networks, and by the High Performance Computing Challenge to commandeer the largest number of processors in the race toward achieving a teraflop of performance.

This year the conference strongly solicited papers on supercomputing applications, and 40 were submitted. Papers at this year's conference cover scientific applications in biochemistry, biology, engineering, fluid dynamics, ocean and atmospheric modeling, and physics. The technical program includes topics in data mining, performance, parallel technology, networking, and computer architectures. As with previous Supercomputing conferences, the largest percentage of papers was received in the fields of software development: compilers, tools, and debuggers. The overall acceptance rate for technical papers was 29%. A breakdown of the papers by discipline shows the well-rounded nature of the presentations:

Discipline	Submitted	Accepted	% Accepted
Networking and Distributed Computing	34	9	26
Algorithms	28	7	25
Data Mining	12	3	25
Performance	29	7	24
Software Tools and Compilers	71	18	25
Architecture	18	3	17
Applications	40	18	45
Education	8	3	38
Security	1	1	100

The Technical Papers Committee had a strong commitment to quality. You will note that for some of the technical sessions only two speakers were selected from refereed papers; for cases in which a third acceptable paper was not available, lead-in speakers added their perspectives to the sessions and laid the groundwork for the subsequent presentations. These lead-in speakers were selected by the committee based on their expertise and reputations among their colleagues in the field.

This year all proceedings from the conference will be available only in electronic format, in keeping with the goals of the conference to explore and endorse new technologies. In addition to producing a CD-ROM, we also have made the proceedings available on the World Wide Web, at http://www.supercomp.org /sc95/proceedings/. We expect that these papers will be of great interest to researchers and developers of supercomputing stems and applications.

Sid Karin
Chair, Supercomputing '95
Director, San Diego Supercomputer Center

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