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Parallel Computer Routing and Communication

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Preface

Due to advances in both hardware and systems design over the last decade, the power of parallel computers has leaped forward dramatically. The backbone of a massively parallel computer is the interconnection network that ties all of the processors together into one coherent machine. Although both interest in networks and routing, as well as the technology itself, has grown very quickly in recent years, there has been little cohesiveness to the routing/interconnection network community. For this reason, the first Parallel Computer Routing and Communication Workshop (PCRCW) was formed.

PCRCW '94, held at the University of Washington in Seattle on May 16, 17, and 18, 1994 had three primary goals:

1. To bring researchers from the routing/network community together.
2. To provide a platform for the presentation of the latest work in interconnection networks.
3. To produce a proceedings to disseminate the latest results to the entire research community.

The first goal was accomplished at the workshop, with over 60 attendees, approximately 40% of whom were from industry, with the remaining 60% from academia. The panels, banquet, and forum provided many opportunities for people to meet others in the community. The second goal was satisfied with the invited keynote address by Duncan Lawrie and 23 other talks covering the papers presented in this volume. Finally, the third goal is satisfied with the publication of these proceedings.

This volume includes 23 regular papers, covering areas from details of hardware design to proofs of theoretical issues. There are also many papers dealing with the performance of various adaptive routing schemes, new network topologies, network interfaces and fault-tolerance issues.

We would like to thank the many researchers and attendees who contributed to this successful workshop. The members of the program committee deserve extra thanks for helping in the organization of the workshop and the selection of papers to include. Clifford Lau and the US Office of Naval Research are especially appreciated for their support of this workshop. Finally, we wish to thank Kay Beck for handling the local arrangements and organizational details of the workshop in a nearly glitch-free manner.

Seattle, July 1994

Kevin Bolding
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