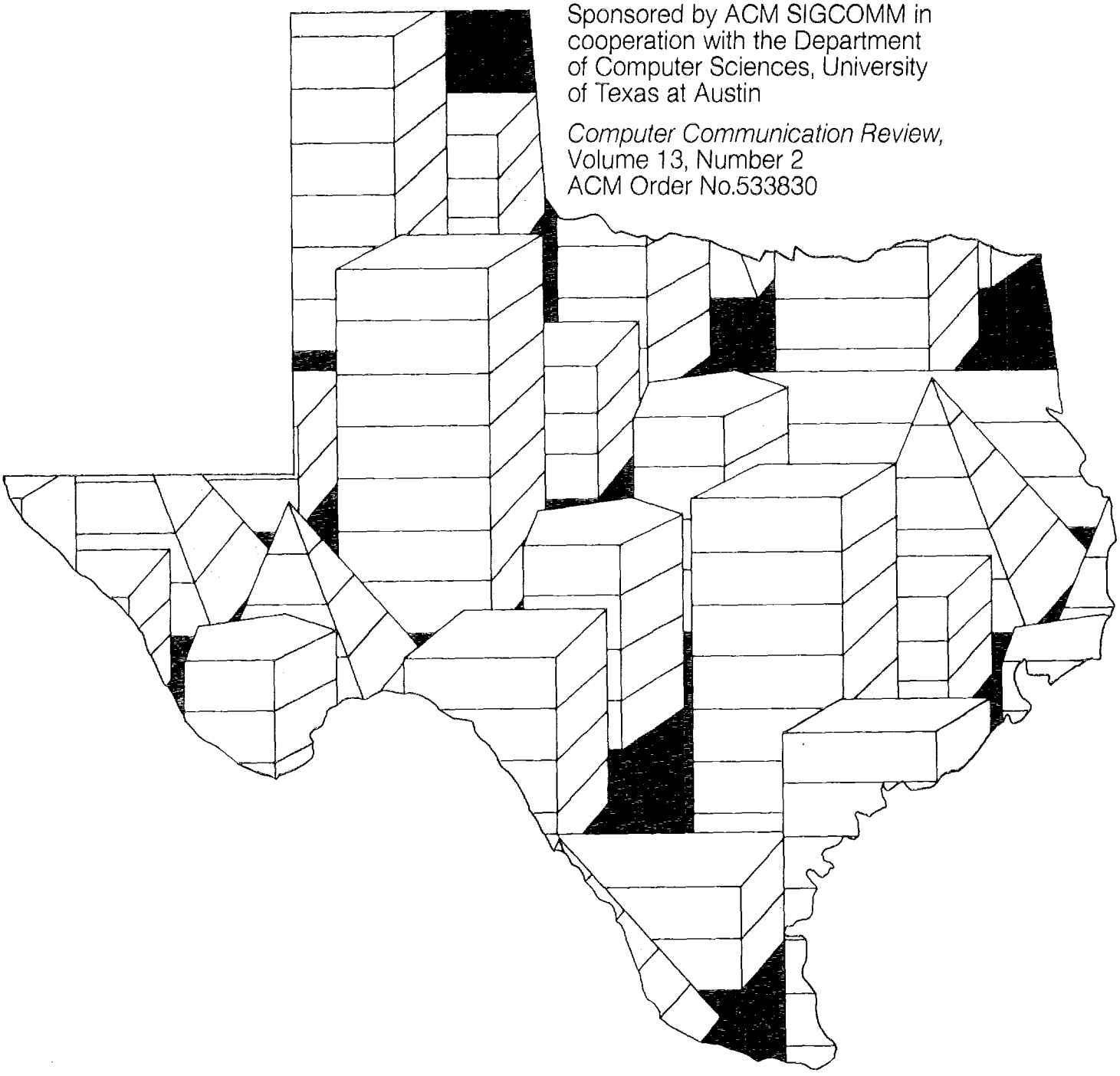
SIGCOMM '83 Symposium

Communications Architectures & Protocols

University of Texas at Austin
March 8 & 9, 1983



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Message From The General Chairman

SIGCOMM '83 is the first symposium to be sponsored solely by the ACM Special Interest Group on Data Communication (SIGCOMM). The symposium builds on the momentum of the Computer Network Performance Symposium cosponsored last year with SIGMETRICS and SIGOPS. An annual SIGCOMM symposium is intended to complement SIGCOMM's quarterly newsletter, the Computer Communication Review, now in its thirteenth year, in serving the almost 5000 members of SIGCOMM.

The tremendous amount of current development activity in computer communications architectures and protocols is reflected in the large number of papers submitted to the symposium. The eleven sessions of refereed papers are complemented by the opening panel and three other panel sessions on the current status of network architectures and protocol implementation experience. It is an international symposium, with about one third of the papers from outside the United States, about the same ratio as with the SIGCOMM membership.

In conjunction with the symposium, two tutorials are being presented. Richard desJardins surveys the international standards for open systems interconnection. David Clark reviews practical considerations of protocol implementation.

We are grateful to the Department of Computer Sciences, University of Texas at Austin, for their cooperation and for arranging the use of the facilities of the Joe C. Thompson Conference Center. I am most appreciative to Simon Lam for organizing the program and for coordinating the Texas committee support. I also wish to thank the members of the symposium committee, the program committee, authors, and panelists for their efforts in making the symposium successful.

David C. Wood
General Chairman
ACM SIGCOMM '83 Symposium

Message From The Program Chairman

The ACM SIGCOMM '83 Symposium provides a forum for the presentation and discussion of state-of-the-art network architectures and protocols for data communications. All aspects of work, both theoretical and practical, pertaining to the entire life cycle of developing protocol systems and networks are of interest to the symposium: theory, systems analysis, architecture, design, implementation, standardization, etc. The symposium is epitomized by the title of the opening panel: Putting Protocols to Work. We are very fortunate to have three experts in the opening panel who will discuss the issues of putting protocols to work in the real world. They are: Vinton Cerf of MCI Communications Corporation, Louis Pouzin of CNET in France, and John Shoch of Xerox Corporation. All of them have had extensive experience and personal involvement in the design and implementation of operational networks and communication protocols. They will speak from their unique perspectives about the many difficulties that are encountered in deploying real networks and protocols, touching upon not only technical issues but also issues of standardization, user needs in various sectors of the marketplace, etc.

Following the opening panel, the symposium is organized into two tracks of parallel sessions, one primarily on design and implementation issues and the other primarily on verification and performance analysis issues.

On the practical side, the symposium's technical program has placed a strong emphasis on implementation experience. This is the primary concern of panel discussions in Session 3A and Session 4A. Session 6A is devoted to the development and implementation experience of a specific network, the computer science research network project (CSNET) sponsored by the National Science Foundation. Other sessions on practical issues include a panel on the current status of the development of protocol architectures and relevant standardization activities (Session 2A). Internetworking and issues of protocol compatibility are addressed in Session 8A. Session 7A is concerned with issues in the design of network operating systems. Some new ideas on network architectures and algorithms are presented in Session 5A.

On the theoretical side, the sessions may be classified into two categories. The first category includes sessions on analytical models and methods as well as empirical studies to evaluate the performance of new strategies and algorithms for various

protocol functions (Session 2B on analysis of network routing, Session 6B on performance studies, Session 7B on local network access protocols, and Session 8B on queueing models of protocols). The second category is concerned with formal models and techniques on the specification and verification of protocol systems. The logical correctness properties of such protocol systems are of interest. This category includes Sessions 3B and 4B on protocol verification methods. Session 5B on specification, testing and performance analysis of protocols is concerned with both the performance and logical behavior of protocols that can be specified using a layered model.

These proceedings include 34 articles* selected from 52 submitted papers. Two reviews were solicited for each paper submitted. The majority of the reviews were received on time. I would like to thank members of the program committee and the referees for their efforts in handling this tremendous task. Participants of panel sessions were invited to contribute short position papers. These position papers were not refereed.

In addition to the referees and program committee members, several other people made it easy and fun for me to do my job as Program Chairman. My hearty thanks go to Dave Wood (the General Chairman), Becky Hutchings (Publicity), Manbir Kathuria (Proceedings), Kata Carbone (Registration), and Carole Kincaid (Treasurer). Last but not least, I would like to thank Al Dale, Chairman of the University of Texas Department of Computer Sciences for the generous support and encouragement he has given to this undertaking.

Simon S. Lam
Program Chairman
ACM SIGCOMM '83 Symposium

*Outstanding papers were selected and forwarded to Anita Jones, Editor-in-Chief of the new ACM Transactions on Computer Systems (TOCS). They were selected on the basis of unanimously strong reviews and suitability for journal publications. (Papers with University of Texas authors were excluded from consideration.) After further reviews, two papers were accepted for publication in TOCS. These two articles have not been included in these proceedings. Preprints of them are made available for distribution at the symposium.

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Note: Abstracts were not available at the time of printing.

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