

Authors

Stephen Eric Bechtel

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Currently Mr. Bechtel is a doctoral student at the University of California in the Department of Mechanical Engineering working in the area of continuum mechanics. He received his B.S. in applied mechanics in 1979 from the University of Michigan, Ann Arbor, and his M.S. in continuum mechanics in 1980 from the University of California, Berkeley. During the summers of 1979 and 1980, Mr. Bechtel worked in the Applied Science Department at the IBM Research laboratory in San Jose, California.

David B. Bogy

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Dr. Bogy is a Professor of Applied Mechanics at Berkeley and since 1972 has been a consultant to the applied technology group at the IBM Research laboratory in San Jose. His current technical interests include work in anisotropic elastic composites and various types of contact problems on elastic media. He received a B.A. in geology and mechanical engineering and an M.S. in mechanical engineering in 1959 and 1961, both from Rice University, Houston, Texas, and a Ph.D. in applied mathematics in 1966 from Brown University, Providence, Rhode Island. After postdoctoral work in elasticity at the California Institute of Technology, he joined the faculty of the University of California at Berkeley in 1967. Dr. Bogy is a member of the American Society of Mechanical Engineers and Sigma Xi.

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Dr. Calo is currently manager of the office communications group, dealing with local area communications networks for the office environment. His interests include data communications networks, multi-access protocols, performance evaluation, and applied queueing theory. He joined IBM in 1977 as a member of the Computer Sciences Department at the Thomas J. Watson Research Center, and since that time has worked on several projects concerned with performance evaluation and satellite communications. From 1969 to 1976 he was associated with RCA Laboratories as a member of the technical staff at the David Sarnoff Research Center, Princeton, New Jersey. Dr. Calo received the B.S. degree in electrical engineering from the Newark College of Engineering, Newark, New Jersey, in 1969 and the M.S., M.A., and Ph.D. degrees in electrical engineering from Princeton University in 1971, 1975, and 1976, respectively. Dr. Calo is a member of Eta Kappa Nu, Sigma Xi, Tau Beta Pi, and the Institute of Electrical and Electronics Engineers.

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Dr. Hamacher received the B.A.Sc. degree in engineering physics in 1963 from the University of Waterloo, Canada; the M.Sc. degree in electrical engineering in 1965 from Queen's University, Kingston, Canada; and the Ph.D. degree in 1968 from Syracuse University, New York. Since then he has been at the University of Toronto, where he is currently an Associate Professor in the Departments of Electrical Engineering and Computer Science, and the Associate Chairman of the Division of Engineering Science. His current research interests include local area computer networks, arithmetic processors, and small real-time computer systems. During 1978 to 1979, he was a Visiting Scientist at the IBM Research laboratory in San Jose, California. He is a coauthor of the textbook, *Computer Organization*, published in 1978. Dr. Hamacher is a senior member of the Institute of Electrical and Electronics Engineers and a member of the Association for Computing Machinery, the Association of Professional Engineers of Ontario, and Sigma Xi.

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Dr. Heidelberger is a research staff member working on computer performance modeling and simulation analysis at the Thomas J. Watson Research Center, where he joined IBM in 1978. He received his B.A. in mathematics from Oberlin College, Ohio, in 1975 and his Ph.D. in operations research from Stanford University, California, in 1978. Dr. Heidelberger is a member of the Association for Computing Machinery and the Operations Research Society of America.

Lee W. Hoevel

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Dr. Hoevel joined IBM in 1978 as a research staff member at the Thomas J. Watson Research Center. He is currently a member of the experimental systems structure group and is involved in the analysis of cache performance and the design of system extension mechanisms. Dr. Hoevel completed his undergraduate work at Rice University, Houston, Texas, in 1968, and later received a Ph.D. in electrical engineering from the Johns Hopkins University, Baltimore, Maryland, while a Research Associate at Stanford University. Dr. Hoevel is a member of the Association for Computing Machinery, the Institute of Electrical and Electronics Engineers, and Sigma Xi.

George Markowsky

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Dr. Markowsky is a member of the theory of programming group at the Thomas J. Watson Research Center. He joined IBM in 1974. His current interests include the applications of order theory to computation, combinatorics, and analysis of algorithms. He received his B.A. in mathematics from Columbia University in 1968 and his M.A. in mathematics from Harvard University in 1969. From 1969 to 1972, he was instructor and then Assistant Professor of Mathematics at St. Mary's College of Maryland in St. Mary's City. He returned to Harvard and received his Ph.D. in mathematics in 1973. He stayed on at Harvard as a postdoctoral fellow in 1973 and 1974. Dr. Markowsky is a member of the American Mathematical Society, the Mathematical Association of America, and Phi Beta Kappa.

Jeanine Meyer

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Dr. Meyer is a member of the automation research group in the Computer Sciences Department at the IBM Thomas J. Watson Research Center. She joined IBM in 1979. She received a B.S. in mathematics from the University of Chicago in 1967 and an M.A. in mathematics from Columbia University, New York, in 1968. She received a Ph.D. in computer science from the Courant Institute, New York University, in 1980, for work in operating systems and programming languages. Her current work is on robotics and geometric modeling. Dr. Meyer is a member of American Women in Mathematics and Phi Beta Kappa.

Charles H. Sauer

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Dr. Sauer has been a research staff member at the Thomas J. Watson Research Center since 1975. His current work is on performance modeling methodology and software. He received his B.A. in mathematics and his Ph.D. in computer science from the University of Texas in 1970 and 1975. From 1977 to 1979 he was an Assistant Professor of Computer Science at the University of Texas at Austin, while on leave of absence from IBM. Dr. Sauer has recently completed a textbook, *Computer System Performance Modeling: A Primer*, co-authored by K. M. Chandy. He has received an IBM Outstanding Innovation Award for creation and basic design of the Research Queueing Package (RESQ). Dr. Sauer is a member of the Association for Computing Machinery.

Martin Schatzoff

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Dr. Schatzoff is a scientific staff member and technical assistant to the manager of the Cambridge Scientific Center. He is currently working in the areas of statistical computing and computer graphics. He joined IBM in 1955 at the Glendale laboratory in Endicott, New York, as a statistical consultant and later became manager of reliability analysis and prediction. He worked in General Products Division headquarters in Harrison, New York, on the development of statistical models for product forecasting from 1961 to 1962 and did research in interactive statistical computing at the Cambridge Scientific Center from 1964 to 1967. Dr. Schatzoff was a visiting Associate Professor of Statistics at Yale University from 1967 to 1968. From 1968 to 1980 he was manager of operations research at the Cambridge Scientific Center, where he was responsible for management of the system performance work described in his *Journal* paper, as well as a number of other projects in the areas of system design and analysis, interactive statistical computing, and application development. Dr. Schatzoff received a B.A. in economics from Brooklyn College in 1950, an M.B.A. from New York University in 1952, and the M.S. and Ph.D. degrees in statistics from Harvard University in 1962 and 1964 under the IBM Graduate Resident Study program. He has taught statistics courses at Harvard, Yale, Northeastern, and Boston Universities and was elected a Fellow of the American Statistical Association in 1970. Dr. Schatzoff is a member of the American Statistical Association and Phi Beta Kappa.

Gerald S. Shedler

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Mr. Shedler has been a Research staff member at IBM since 1965, initially at the Thomas J. Watson Research Center in Yorktown Heights, New York, and in the Computer Science Department at the Research laboratory in San Jose since 1970. During 1973 to 1974, while on sabbatical from IBM, he was associated with Stanford University as Acting Associate Professor in the Department of Operations Research, and subsequently has been Consulting Associate Professor in the same department. He has worked extensively on applications of stochastic processes, particularly to performance evaluation of computer systems. His current research is on discrete-event methods for simulation of stochastic systems. Mr. Shedler is coauthor of *Regenerative simulation of response times in networks of queues*, published in 1980.

Gary J. Stroebel

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Dr. Stroebel is a senior engineer in the advanced systems development group at the Rochester laboratory. His primary responsibilities involved performance evaluation and modeling of current and future systems. He received a B.S. in 1965, an M.S. in 1967, and a Ph.D. in 1969, all in engineering mechanics and mathematics from the University of Minnesota. He joined IBM in Rochester in 1969. His early assignments dealt with the design and analysis of various mechanical components. Since 1976, his work has been in the performance analysis and modeling of computer systems and communication networks. Dr. Stroebel is a member of the Association for Computing Machinery.

Frank E. Talke

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Dr. Talke joined IBM in 1969 at the San Jose Research laboratory and is currently manager of a device mechanics group in the applied science complex in San Jose. Prior to his present involvement in ink jet technology, he studied the mechanical aspects of magnetic recording technology. He attended the University of Stuttgart, Germany, where he received a Diplom-Ingenieur degree (M.S.) in mechanical engineering in 1965, and the University of California at Berkeley, where he received a Ph.D. in mechanical engineering in 1968.

Jean Voldman

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Mr. Voldman is currently senior manager of experimental system structures within the systems laboratory in the Computer Sciences Department at the Thomas J. Watson Research Center. He is interested in defining hardware and software structures to support large transactions processing systems. Mr. Voldman joined IBM France in 1968, working as a system programmer for IBM France information systems. In 1970, he was named manager of the systems programming area in Orleans, France. In 1973, he joined the Advanced Systems Development Division in Mohansic, New York, as an international assignee, working as a

product planning advisor. In 1976, he came back to information systems in IBM France at the Orly location, where he worked as manager of systems programming. He then left in 1978 for his present international assignment in the United States at Yorktown Heights. Mr. Voldman graduated from Ecole Nationale Supérieure de Mécanique et d'Electricité (ENSEM) in Nancy, France, in 1965. He holds a License es Sciences Physiques from the University of Nancy.

Peter D. Welch

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Dr. Welch is a Research staff member at the Thomas J. Watson Research Center. He received his Ph.D. in mathematical statistics from Columbia University in 1963. Dr. Welch has made

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Michael A. Wesley

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Dr. Wesley is a member of the automation research group at the Thomas J. Watson Research Center. He joined IBM in 1960 at the IBM United Kingdom Laboratories, Hursley, England, and transferred to Yorktown in 1966. He has worked on micro-programmed machines, character recognition, image processing, and system architecture. His current work is on programming systems for mechanical assembly. He received the B.A. degree in mechanical sciences and the Ph.D. degree in control engineering from Cambridge University, England, in 1960 and 1966.