

Authors

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Mr. Antonacci, who joined IBM in 1974 at the Scientific Center, is currently interested in the design and development of a relational data base and a formal query language to access it. He received a degree in analytical chemistry from Bari University in 1972.

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Dr. Bard is currently working on system performance measurement and evaluation. He has been with IBM since 1957 and has worked on the development of computer applications in the field of multicomponent distillation, nonlinear programming, mathematical model fitting, and optimal control. He received a B.S. in 1954 from the University of Pennsylvania and an M.S. and a Ph.D. in chemical engineering in 1956 and 1966 from Columbia University, New York. He published a book entitled *Nonlinear Parameter Estimation* in 1974.

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Dr. Chignoli joined IBM in 1960 and has been a member of the Venice Scientific Center since 1973. His interests include numerical analysis of differential equations and linear programming. He received his Ph.D. in mathematics from the University of Milan, Italy.

Pietro Dell'Orco

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Mr. Dell'Orco's current interests are in data base research and in the use of natural language to access data bases. Prior to joining IBM in 1969, he was a Professor of Programming Languages in the computer science department of Bari University. He received his degree in physical chemistry from Bari University in 1966. Mr. Dell'Orco is a member of the Association for Computing Machinery.

Alfonso Flores M.

IBM Mexico S.A., Latin American Scientific Center, Mexico City

Mr. Flores joined the Latin American Scientific Center in 1975 after receiving his B.S. in electrical engineering from the Instituto Politécnico Nacional, Mexico. His original assignment was with a remote-sensing group that worked jointly with the Mexican government on modifications to the ERMAN-II system. He now works in a geographic information systems group on the application of display systems to geographic data bases.

Tetsunosuke Fujisaki

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Mr. Fujisaki is an advisory researcher. He received his B.B. degree in 1969 and his M.S. degree in 1971, both from Tokyo University. He joined IBM in 1971 and has worked in the areas of computer graphics and natural language processing. He is now project leader of a computer linguistics group, where he is primarily concerned with a retrieval system for documents in the Japanese language. He is a member of the Information Processing Society of Japan, the Institute of Electronics and Communication Engineers of Japan, and the Mathematical Linguistic Society of Japan.

Bezael Gavish

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Dr. Gavish is an assistant professor and area coordinator of computers and information systems at the Graduate School of Management. He was a member of the IBM Israel Scientific Center in Haifa from 1973 to 1976. From 1968 to 1975 he was involved in the development of large scale logistic and transportation management computer systems, and in computer-aided medical diagnosis. His current interests include integer programming and optimal control of queues. Dr. Gavish received his B.Sc. in industrial management and engineering in 1967, his M.Sc. in 1970 and his Ph.D. in 1975 in operations research from the Technion, Haifa. Professor Gavish is a member of the Association for Computing Machinery, the Institute of Management Sciences, the IPA, and the Operations Research Society of America.

Jenö Gazdag

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Dr. Gazdag received his B.E. from McGill University, Montreal, Canada, in 1959, his M.A.Sc. from the University of Toronto, Canada, in 1961, and his Ph.D. from the University of Illinois, Urbana, in 1966, all in electrical engineering. From 1961 to 1962 he was employed by the National Research Council of Canada in Ottawa. In 1966, he joined IBM's Research Division. He is now a staff member of the Scientific Center in Palo Alto. His main research interest is in numerical solution methods for partial differential equations. Dr. Gazdag is a member of the American Physical Society.

Mario Hernández V.

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Mr. Hernández is currently in charge of ERMAN-II system maintenance and modifications in a remote-sensing group. He first joined the Latin American Scientific Center in 1975, and has worked on mathematical techniques applied to digital image processing, digital filter theory, and application projects using the ERMAN-II system. Mr. Hernández received the B.S. in mathematics from the National University of Mexico in 1974. He is a member of the Mexican Mathematical Society.

Hubert Lehmann

IBM Germany, Heidelberg Scientific Center

Dr. Lehmann joined IBM Germany at Boeblingen in 1972, where he worked on an automatic language analysis project. In 1973, he started his work on the User Specialty Languages (USL) system at Heidelberg. His professional interests include computational linguistics and the semantics of natural language. From 1968 to 1972, Dr. Lehmann studied linguistics, mathematics, and philosophy at the University of Stuttgart, Germany, and the State University of New York at Buffalo. He received a Ph.D. in linguistics from the University of Stuttgart in 1972.

David W. Low

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Dr. Low joined IBM in 1964 as a systems engineer. He is currently a staff member at the Los Angeles Scientific Center, where his current responsibilities are related to research on energy consumption in buildings. His past work has been in customizing technology, application development discipline, discrete event simulation, and queueing theory. Dr. Low received his B.A. from the University of California at Los Angeles in 1963, and his M.S. from the California State University at Northridge in 1967, both in mathematics. He obtained his Ph.D. in mathematics and operations research from the University of California at Los Angeles in 1971. He is a member of the American Society for Heating, Refrigeration, and Air Conditioning Engineers; the Association for Computing Machinery; the Institute for Management Science; the Operations Research Society; and the Society for Industrial and Applied Mathematics.

Bruno Lunenfeld

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Dr. Lunenfeld is Director of the Institute of Endocrinology, where his current research interests include computer-aided diagnosis, automated management of multi-trauma patients and reproductive physiology. He is a professor of life science and former head of the department at Bar Ilan University, Ramat Gan, Israel, and head of the laboratory division at Tel Hashomer since 1976. Dr. Lunenfeld has been a visiting scientist at the Weizman Institute, Rehovoth, Israel. He received his M.D. from the University of Geneva, Switzerland, in 1952. Dr. Lunenfeld is a member of the Israel Fertility Association, the Israel Endocrine Society, the Royal Society of Medicine, the American En-

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Laura Muñoz

Universidad Complutense de Madrid, Spain

Miss Muñoz received the degree of Licentiate in geology in 1975 from the Universidad Complutense de Madrid, where she is currently working on her doctoral thesis in the department of geodynamics. Her field of specialization is remote sensing applied to geology. In 1976, she received an IIE fellowship for study at the Center of Astrogeology in Flagstaff, Arizona. She is a member of the Real Sociedad Española de Historia Natural.

Riccardo Rabagliati

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Dr. Rabagliati is a member of a numerical hydrodynamics group at the Venice Scientific Center. He joined IBM in 1969 after receiving his Ph.D. in physics from the University of Torino, Italy.

Antonio Santisteban

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Dr. Santisteban joined the Madrid Scientific Center in 1973, where he currently works in the area of image processing applied to remote sensing. He studied physics at the Universidad Complutense de Madrid and obtained the degrees of Licentiate in 1969 and Doctor in 1974. Prior to joining IBM, Dr. Santisteban worked on theoretical elementary particle physics and taught quantum mechanics, field theory, and applied mathematics at the Universidad Complutense de Madrid. He is a member of the Real Sociedad Española de Física y Química.

Willy Schild

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Dr. Schild has been a staff member of the Scientific Center since 1973. His current interests include cost modeling for large scale housing construction, man-machine communication, and sequential decision problems in medicine. He received a B.Sc. in mathematics from the City College of New York in 1960, an M.Sc. in applied mathematics from New York University in 1962, and a Ph.D. in philosophy from New York University in 1969. He has been a visiting scientist in the department of applied mathematics at the Weizman Institute, Rehovoth, Israel and has served on the faculties of Brooklyn College and Seton Hall University. From 1971 to 1973 he was employed as a senior systems specialist at ITT Data Services, where he conceived and designed the American Broadcasting Corporation Primary Election System and was jointly responsible for the design and development of the Presidential Projection System.

Piero Sguazzero

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Dr. Sguazzero received the doctor's degree in mathematics from the University of Trieste, Italy, in 1969. Since 1970, he has been with the Venice Scientific Center, where his work relates to numeric modeling in fluid dynamics. In 1975, Dr. Sguazzero spent a year as a visiting staff member at the Data Processing Division's Scientific Center in Palo Alto, California. Prior to joining IBM, he held positions at the University of Trieste and at the National Council of Research of Italy.

Masaaki Sibuya

IBM Japan, Tokyo Scientific Center

Dr. Sibuya has been a research consultant, working on data analysis, at the Scientific Center since joining IBM in 1970. He is currently engaged in a computational linguistic project. Prior to joining IBM he was on a research staff at the Institute of Statistical Mathematics, Tokyo; while there he took a leave of absence as a visiting lecturer at the Indian Statistical Institute, Calcutta, for half a year in 1961. During the academic years 1965 to 1967, he was a visiting Assistant Professor at the department of computer science at the University of Western Ontario, London, Canada. He received a Bachelor of Engineering degree in 1953 and a Master of Engineering degree in 1955, both from Tokyo University, and a Ph.D. from Osaka University in 1973. Dr. Sibuya is a member of the Information Processing Society of Japan, the Mathematical Society of Japan, and the Operations Research Society of Japan.

Vincenzo N. Spadavecchia

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Mr. Spadavecchia is working on research in data bases, data base tools, and development of advanced systems with a user friendly interface for interaction with the data base. After he joined IBM at the Scientific Center in 1969, he spent 1970 to 1971 at the Philadelphia Scientific Center working on the development of methodologies for use of computers in education. He received his degree of electrotechnical engineer at Bari University in 1968. Mr. Spadavecchia is a member of the Associated Electrical Industries, the Association for Computing Machinery, and the Institute of Electrical and Electronics Engineers.

Yoichi Takao

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Mr. Takao is a researcher at the Tokyo Scientific Center, where he joined IBM in 1971. His current interests include data base management, end-user interfaces, and NCI handling. He received a B.A. degree in physics in 1969 and an M.S. degree in physics in 1971, both from the University of Tokyo. He is a member of the Association for Computing Machinery, the Information Processing Society of Japan, and the Institute of Electronics and Communication Engineers of Japan.

Stephen J. P. Todd

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Mr. Todd joined the Peterlee Scientific Centre in 1971. He studied mathematics at Oxford University on an IBM scholarship, receiving a B.A. in 1968, a Diploma in advanced mathematics in 1969, and an M.A. in 1972. He has worked on macro processing and relational data base systems and their application to sorting problems. His current work is with image processing.

Ezio Todini

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Dr. Todini is a permanent staff member at the Pisa Scientific Center, where he joined IBM in 1971. He is working in the field of hydrology. He has worked on the development of the Constrained Linear Systems (CLS) method for hydrological modeling. He has taught courses in hydraulics as a professor on the faculty of civil engineering at the University of Pisa and a course of hydrology at the International Center of Hydrology at the University of Padova. Dr. Todini graduated from the University of Pisa in 1969 as a Doctor in hydraulic engineering. Prior to joining the Pisa Scientific Center, he held a scholarship from the Italian Ministry of Public Education for the study of flood propagation in natural open channels in conjunction with the center. Dr. Todini is a member of the American Geophysical Union, the Associazione Idrotecnica Italiana, and the International Association for Hydraulic Research.

Antonio Turtur

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Since joining IBM in 1974, Mr. Turtur has worked on the design and development of relational data bases and formal query languages. He received his degree in computer science from Pisa University in 1974.

Giampiero Volpi

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Dr. Volpi received a Ph.D. in mathematics from the University of Pavia, Italy, in 1971. He served as a research mathematician with the Numerical Analysis Laboratory of the National Council of Research in Pavia dealing with free boundary problems in porous media. Since 1974, Dr. Volpi has been a member of the Venice Scientific Center, where he works on numeric solutions to hydrodynamic problems.