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Preface

The 3rd International Symposium on Large Spatial Databases (SSD'93) was held at the National University of Singapore, June 23–25, 1993. The previous meetings of the series were at Santa Barbara (1989) and Zurich (1991). SSD'93 again was planned as a forum for researchers and practitioners specialising in database theory and for advanced applications of Spatial Information Systems.

Seventy submitted papers were each reviewed by three referees. Twenty-six papers were accepted for presentation. The technical program also included three keynote papers (Kim, Schek, and Stonebraker), one invited paper (Tang-Kwong), two panels and four tutorials (Egenhofer, Freeston, Han, and Samet). The growth in the number of submissions over the SSD series to date is evidence of the increasing interest in Spatial Information Systems in general and spatial database in particular. This interest undoubtedly stems from both the research challenges for computer scientists in spatial data management and the potential real-world significance of advances in the state of the art.

Comparison of the papers presented at SSD'93 and SSD'91 shows further progress in the core areas of spatial database and registration of new problems arising from new types of applications. The core topics of data modelling, spatial indexing, storage management and query processing continued to be strongly represented although the influence of changing styles of use of Spatial Information Systems can be seen in new problems within these traditional areas. Ng and Kameda, for example, considered concurrent access to R-trees and Becker and his colleagues indexing for multiple versions of objects. New topics included interoperability of spatial databases, where the paper of Schek and Wolf was complemented by the case study by Kolovson, Neimat and Potamianos, deductive database (Abdelmoty, Williams and Paton) and parallel processing (Franklin and Kankanhalli).

Specialisations such as spatial databases rely on fresh problems to retain their vigour. Stonebraker, Frew and Dozier considered the challenges to the existing technology posed by very large environmental databases and noted some solutions under investigation in the SEQUIOA 2000 Project. Williams and Woods posed another new form of problem in representing and manipulating expectations and conclusions.

Results of research into spatial databases have found their way into commercial implementations of geographical information systems. Kim, Garza and Keskin identified a number of key issues in spatial databases that need to be addressed from an object-oriented system point of view before we can expect to see a rich support of spatial data management in commercial database systems.

As Co-Chairs of the Program Committee, we wish to place on record our appreciation of the contributions of many people. Clearly any conference relies on the number and quality of the submitted papers and we acknowledge the support of the 70 individuals or groups making submissions. The peer review process itself required 210 individual reviews by the members of the Program Committee and other colleagues who were co-opted. The short period between the closing date for submissions and the Program Committee meeting placed particular demands on the referees and we thank them for their diligence and cooperation. We also thank Hans Schek and ETH for providing facilities for the PC meeting at Zuerich, and Max Egenhofer, Tok Wang Ling, Hongjun Lu, Ron Sacks-Davis, Hans Schek, Soon Kiang Wee, Yuk-Wah Tang-Kwong and Chung Kwong Yuen for their support. Finally, we thank Siew Foong Ho, Line Fong Loo and Ronghui Luo for their assistance in preparation of Calls for Papers and Participations, and Cuie Zhao for her assistance in preparation of this proceedings.

Singapore, June 1993 David J. Abel and Beng Chin Ooi

Message from the General Chair

The Department of Information Systems and Computer Science, National University of Singapore, is honoured to have headed the organizational effort for the 1993 International Symposium on Large Spatial Databases, SSD'93. Like research into database techniques in the storage and representation of knowledge during the eighties, databases for geometric, pictorial and multimedia information are at the current forefront of research. Being the international conference specializing in this exciting field of endeavour, SSD'93 will do much to heighten regional awareness and promote international cooperation in research. As the reader can see from the table of contents the conference has attracted eminent keynote speakers and an active group of researchers to present their research, producing altogether an excellent programme.

I wish to acknowledge the assistance and cooperation we received from the sponsoring organizations, the programme committee, the referees, and numerous other individuals who put in many hours of work to make the event a success. They have been listed in the appropriate places in this volume. Last but not least, I thank the publisher for the smooth production of the proceedings in time for distribution at the conference.

C. K. Yuen
SSD'93 General Chair

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Mr. Tan, Chin Nam, Chairman of National Computer Board
and Managing Director, Economic Development Board, Singapore

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Contents

Keynote Paper

Spatial data management in database systems: Research directions
Won Kim (Keynote Speaker), Jorge Garza, Ali Keskin 1

Data Modeling

Realms: A foundation for spatial data types in database systems
Ralf H. Gueting, Markus Schneider 14

A canonical model for a class of areal spatial objects
Michael F. Worboys, Petros Bofakos 36

Strong integration of spatial domains and operators in a relational database system
Thierry Larue, Dominique Pastre, Yann Viemont 53

Spatial Indexing

The transformation technique for spatial objects revisited
Bernd-Uwe Pagel, Hans-Werner Six, Henrich Toben 73

A paging scheme for pointer-based quadtrees
Clifford A. Shaffer, Patrick R. Brown 89

Indexing Mechanisms

A hierarchical spatial index for cell complexes
Elisabetta Bruzzone, Leila De Floriani, Monica Pellegrinelli 105

On optimal multiversion access structures
Bruno Becker, Stephan Gschwind, Thomas Ohler, Bernhard Seeger, Peter Widmayer 123

Concurrent accesses to R-trees
Vincent Ng, Tiko Kameda 142

Handling of Raster and Vector Data

A spatial data model and a topological sweep algorithm for map overlay
Ulrich Finke, Klaus Hinrichs 162

An optimal quadtree translation algorithm
Chuan-Heng Ang 178

Database support for multidimensional discrete data
Peter Baumann 191

Keynote Paper

From extensible databases to interoperability between multiple databases and GIS applications
Hans-Jörg Schek (Keynote speaker), Andreas Wolf 207

Spatial Database Systems

Interoperability of spatial and attribute data managers: A case study
Curtis P. Kolovson, Marie-Anne Neimat, Spyros Potamianos 239

GeO2: Why objects in a geographical DBMS?
Benoit David, Laurent Raynal, Guylaine Schorter, Veronique Mansart 264

Topology

A small set of formal topological relationships suitable for end-user interaction
Eliseo Clementini, Paolino Di Felice, Peter van Oosterom 277

Qualitative and topological relationships in spatial databases
Z. Cui, A. G. Cohn, D. A. Randell 296

Topological relations between regions in R^2 and Z^2
Max J. Egenhofer, Jayant Sharma 316

Storage Management

Query-adaptive data space partitioning using variable-size storage clusters
Gisbert Droege, Hans-Jörg Schek 337

A storage and access architecture for efficient query processing in spatial database systems
Thomas Brinkhoff, Holger Horn, Hans-Peter Kriegel, Ralf Schneider 357

Query processing of spatial objects: Complexity versus redundancy
Michael Schiwietz, Hans-Peter Kriegel 377

Keynote Paper

The SEQUOIA 2000 project
Michael Stonebraker (Keynote speaker), James Frew, Jeff Dozier 397

Query Retrieval

Neighborhood query and analysis with GeoSAL, a spatial database language
Zhexue Huang, Per Svensson 413

Application of a reciprocal confluence tree unit to similar-picture retrieval
Daniel J. Buehrer, C. C. Chang 437

Knowledge Engineering in SDS

Deduction and deductive databases for geographic data handling
A. I. Abdelmoty, M. H. Williams, N. W. Paton 443

Representing expectations in spatial information systems: A case study
Graham J. Williams, Steven G. Woods 465

3-Dimensional Data Handling

Volumes from overlaying 3-D triangulations in parallel
Wm Randolph Franklin, Mohan Kankanhalli 477

A declarative, object-oriented interface to a solid modeler
Michael L. Heytens, Cristiano Sacchi 490

Indexing on spherical surfaces using semi-quadcodes
Ekow J. Otoo, Hongwen Zhu 510