

Table of Contents

Modeling and Querying

Moving Objects: Logical Relationships and Queries	3
<i>Jianwen Su, Haiyan Xu, Oscar H. Ibarra (University of California, Santa Barbara, USA)</i>	
A Spatiotemporal Model and Language for Moving Objects on Road Networks	20
<i>Michalis Vazirgiannis (Athens University of Economics & Business, Greece), Ouri Wolfson (University of Illinois, USA)</i>	
Similarity of Cardinal Directions	36
<i>Roop K. Goyal (ESRI, USA), Max J. Egenhofer (University of Maine, USA)</i>	

Moving-Object Query Processing

Querying Mobile Objects in Spatio-Temporal Databases	59
<i>Kriengkrai Porkaew (King Mongkut's University of Technology at Thonburi, Thailand), Iosif Lazaridis, Sharad Mehrotra (University of California, Irvine, USA)</i>	
K-Nearest Neighbor Search for Moving Query Point	79
<i>Zhexuan Song, Nick Roussopoulos (University of Maryland, USA)</i>	
Semantic Caching in Location-Dependent Query Processing	97
<i>Baihua Zheng, Dik Lun Lee (Hong Kong University of Science and Technology, PRC)</i>	

Query Processing—Architectures and Cost Estimation

A Model-Based, Open Architecture for Mobile, Spatially Aware Applications	117
<i>Daniela Nicklas, Matthias Großmann, Thomas Schwarz (University of Stuttgart, Germany), Steffen Volz (Institute for Photogrammetry, Stuttgart, Germany), Bernhard Mitschang (University of Stuttgart, Germany)</i>	
Continuous Queries within an Architecture for Querying XML-Represented Moving Objects	136
<i>Thomas Brinkhoff, Jürgen Weitekämper (Fachhochschule Oldenburg, Germany)</i>	

Selectivity Estimation of Complex Spatial Queries 155
Nikos Mamoulis (CWI, The Netherlands), Dimitris Papadias (Hong Kong University of Science and Technology, PRC)

Wavelet-Based Cost Estimation for Spatial Queries 175
Min Wang (IBM T. J. Watson Research Center, USA), Jeffrey Scott Vitter, Lipyeow Lim (Duke University, USA), Sriram Padmanabhan (IBM T. J. Watson Research Center, USA)

Processing Advanced Queries

Evaluation of Buffer Queries in Spatial Databases 197
Edward P. F. Chan (University of Waterloo, Canada)

On Multi-Way Spatial Joins with Direction Predicates 217
Hongjun Zhu, Jianwen Su, Oscar H. Ibarra (University of California, Santa Barbara, USA)

Discovering Spatial Co-location Patterns: A Summary of Results 236
Shashi Shekhar, Yan Huang (University of Minnesota, USA)

Constrained Nearest Neighbor Queries 257
Hakan Ferhatosmanoglu, Ioanna Stanoi, Divyakant Agrawal, Amr El Abbadi (University of California, Santa Barbara, USA)

Formal Aspects

Calendars, Time Granularities, and Automata 279
Ugo Dal Lago, Angelo Montanari (Università di Udine, Italy)

Composing Cardinal Direction Relations 299
Spiros Skiadopoulos (National Technical University of Athens, Greece), Manolis Koubarakis (Technical University of Crete, Greece)

Data Representation

Creating Representations for Continuously Moving Regions from Observations 321
Erlend Tøssebro (Norwegian University of Science and Technology, Norway), Ralf Hartmut Güting (Fernuniversität Hagen, Germany)

Compressing Multiresolution Triangle Meshes 345
Emanuele Danovaro, Leila De Floriani, Paola Magillo, Enrico Puppo (University of Genova, Italy)

Design and Implementation of Multi-scale Databases 365
Sheng Zhou, Christopher B. Jones (Cardiff University, UK)

Industrial Session

The Architecture of ArcIMS, a Distributed Internet Map Server	387
<i>Russell East, Roop Goyal, Art Haddad, Alexander Konovalov, Andrea Rosso, Mike Tait, Jay Theodore (ESRI, USA)</i>	
Efficient Processing of Large Spatial Queries Using Interior Approximations	404
<i>Ravi K. Kothuri, Siva Ravada (Oracle Corporation, USA)</i>	

Data Warehousing and Mining

Efficient Mining of Spatiotemporal Patterns	425
<i>Ilias Tsoukatos, Dimitrios Gunopulos (University of California, Riverside, USA)</i>	
Efficient OLAP Operations in Spatial Data Warehouses	443
<i>Dimitris Papadias, Panos Kalnis, Jun Zhang, Yufei Tao (Hong Kong University of Science and Technology, PRC)</i>	
Pre-Aggregation In Spatial Data Warehouses	460
<i>Torben Bach Pedersen, Nectaria Tryfona (Aalborg University, Denmark)</i>	

Indexing

Interval Sequences: An Object-Relational Approach to Manage Spatial Data	481
<i>Hans-Peter Kriegel, Marco Pötke, Thomas Seidl (University of Munich, Germany)</i>	
Query Processing in Broadcasted Spatial Index Trees	502
<i>Susanne Hambrusch, Chuan-Ming Liu, Walid G. Aref, Sunil Prabhakar (Purdue University, USA)</i>	
Object-Relational Indexing for General Interval Relationships	522
<i>Hans-Peter Kriegel, Marco Pötke, Thomas Seidl (University of Munich, Germany)</i>	
Author Index	543

Advances in Spatial and Temporal Databases

7th International Symposium, SSTD 2001, Redondo
Beach, CA, USA, July 12-15, 2001 Proceedings

Jensen, C.S.; Schneider, M.; Seeger, B.; Tsotras, V.J.
(Eds.)

2001, XI, 543 p., Softcover

ISBN: 978-3-540-42301-0