

CONTENTS

Session 1A: Transaction Management I

Scheduling Real Time Transactions: A Performance Evaluation	1
R. Abbott and H. Garcia-Molina <i>SELECTED BEST PAPER</i>	
Distributed Concurrency Control Performance: A Study of Algorithms, Distribution, and Replication	13
M. Carey and M. Livny	
Split-Transactions for Open-Ended Activities	26
C. Pu, G. Kaiser, and N. Hutchinson	

Session 1B: Database Theory

Enforcing Inclusion Dependencies and Referential Integrity	38
M. Casanova, A. Furtado, and L. Tucherman	
Closed World Database Opened Through Null Values	50
G. Gottlob, and R. Zicari	
Implementing Queries and Updates on Universal Scheme Interfaces	62
C. Lecluse and N. Spyrtos	

Session 2A: Nested Relations and Complex Objects

An Implementation for Nested Relational Databases	76
A. Deshpande and D. Van Gucht	
A Performance Study of Query Optimization Algorithms on a Database System Supporting Procedural Objects	88
A. Jhingran	
The Partial Normalized Storage Model of Nested Relations	100
A. Hafez and G. Ozsoyoglu	

Session 3A: User Interfaces

Browsing Electronic Mail: Experiences Interfacing a Mail System to a DBMS	112
J. Kent, D. Terry, and W. Orr	
Towards a Spatial Query Language: User Interface Considerations	124
M. Egenhofer and A. Frank	

Management of Complex Objects as Dynamic Forms	134
M. Adiba and C. Collet	
 <i>Session 4A: Management of Schema and Data Evolution</i>	
Versions of Schema for Object-Oriented Databases	148
W. Kim & H. Chou	
Temporal Relationships in Databases	160
S. Chaudhuri	
A Logical Framework for Temporal Deductive Databases	171
S. Sripada	
 <i>Session 4B: Pot Pourri</i>	
Dynamic Derivation of Personalized Views	183
E. Neuhold and M. Schrefl	
Administration and Autonomy in a Replication-Transparent Distributed DBMS	195
K. Abbott and D. McCarthy	
Rapid Application Prototyping: The Proquel Language	206
J. Lingat, P. Colignon, and C. Rolland	
 <i>Session 5A: Query Optimization</i>	
Implementing an Interpreter for Functional Rules in a Query Optimizer	218
M. Lee, J. Freytag, and G. Lohman	
Anatomy of a Modular Multiple Query Optimizer	230
A. Rosenthal and U. Chakravarthy	
Selectivity Estimation and Query Optimization in Large Databases with Highly Skewed Distributions of Column Values	240
C. Lynch	
 <i>Session 6A: Deductive Databases I</i>	
Towards a Real Horn Clause Language	252
R. Krishnamurthy and S. Naqvi	
Fixed Point Semantics and the Representation of Algorithms on Large Data	264
M. de Rougemont	

Computing Facts in Non-Horn Deductive Systems	273
E. Lozinski	
<i>Session 6B: Textual and Extensible DBMS</i>	
Fast Text Access Methods for Optical and Large Magnetic Disks: Design and Performance Comparison	280
C. Faloutsos and R. Chan	
Design and Implementation of an Extensible Database Management System Supporting User Defined Data Types and Functions	294
V. Linnemann, K. Kuspert, P. Dadam, P. Pistor, R. Erbe, N. Sudkamp, G. Walch, A. Kemper, and M. Wallrath	
Extended User-Defined Indexing with Application to Textual Databases	306
C. Lynch and M. Stonebraker	
<i>Session 8A: High Performance Systems</i>	
The Design of XPRS	318
M. Stonebraker, R. Katz, D. Patterson, and J. Ousterhout	
Disk Shadowing	331
D. Bitton and J. Gray	
An Analysis of Three Transaction Processing Architectures	339
A. Bhide	
<i>Session 8B: Storage Structures</i>	
A Superimposed Coding Scheme Based on Multiple Block Descriptor Files for Indexing Very Large Databases	351
A. Kent, R. Sacks-Davis and K. Ramamohanarao	
Techniques for Design and Implementation of Efficient Spatial Access Methods	360
B. Seeger and H. Kriegel	
Compact 0-Complete Trees	372
R. Orlandic and J. Pfaltz	
<i>Session 9a: Deductive Databases II</i>	
Efficient Transitive Closure Algorithms	382
Y. Ioannidis and R. Ramakrishnan	

Modelling Queries and Updates in Deductive Databases	395
C. de Maindreville and E. Simon	
Efficient Search in Very Large Databases	407
R. Agrawal and H.V. Jagadish	
<i>Session 10a: Transaction Management II</i>	
Reducing Storage for Quorum Consensus Algorithms	419
D. Agrawal and A. El Abbadi	
A Theory of Timestamp-based Concurrency Control for Nested Transactions	431
J. Aspnes, A. Fekete, N. Lynch, M. Merritt, and W. Weihl	
Mixed Concurrency Control: Dealing with Heterogeneity in Distributed Database Systems	445
J. Pons and J. Vilarem	
<i>Session 10B: Query Processing and Optimization</i>	
A Formal Model of Trade-off between Optimization and Execution Costs in Semantic Query Optimization	457
S. Shekhar, J. Srivastava, and S. Dutta	
Hash-Partitioned Join Method Using Dynamic Destaging Strategy	468
M. Nakayama, M. Kitsuregawa, and M. Takagi	
An Information Theoretic Study of Aggregate Responses	479
C. Shum and R. Muntz	