

Table of Contents

Invited Papers

Open Problems in Data-Sharing Peer-to-Peer Systems	1
<i>Neil Daswani, Hector Garcia-Molina, Beverly Yang</i>	
Approximations in Database Systems	16
<i>Yannis Ioannidis</i>	
Bioinformatics Adventures in Database Research	31
<i>Jinyan Li, See-Kiong Ng, Limsoon Wong</i>	

Reasoning about XML Schemas and Queries

Incremental Validation of XML Documents	47
<i>Yannis Papakonstantinou, Victor Vianu</i>	
Typechecking Top-Down Uniform Unranked Tree Transducers	64
<i>Wim Martens, Frank Neven</i>	
Structural Properties of XPath Fragments	79
<i>Michael Benedikt, Wenfei Fan, Gabriel M. Kuper</i>	
On Reasoning about Structural Equality in XML: A Description Logic Approach	96
<i>David Toman, Grant Weddell</i>	

Aggregate Queries

Containment of Aggregate Queries	111
<i>Sara Cohen, Werner Nutt, Yehoshua Sagiv</i>	
Auditing Sum Queries	126
<i>Francesco M. Malvestuto, Mauro Mezzini</i>	
CRB-Tree: An Efficient Indexing Scheme for Range-Aggregate Queries	143
<i>Sathish Govindarajan, Pankaj K. Agarwal, Lars Arge</i>	
Optimal Range Max Datacube for Fixed Dimensions	158
<i>Chung Keung Poon</i>	

Query Evaluation

Processing XML Streams with Deterministic Automata	173
<i>Todd J. Green, Gerome Miklau, Makoto Onizuka, Dan Suciu</i>	

Deciding Termination of Query Evaluation in Transitive-Closure
 Logics for Constraint Databases 190
Floris Geerts, Bart Kuijpers

Query Rewriting and Reformulation

Data Exchange: Semantics and Query Answering 207
*Ronald Fagin, Phokion G. Kolaitis, Renée J. Miller,
 Lucian Popa*

Reformulation of XML Queries and Constraints 225
Alin Deutsch, Val Tannen

New Rewritings and Optimizations for Regular Path Queries 242
Gösta Grahne, Alex Thomo

Database Interrogation Using Conjunctive Queries 259
Michał Bielecki, Jan Van den Bussche

Semistructured versus Structured Data

On the Difficulty of Finding Optimal Relational Decompositions
 for XML Workloads: A Complexity Theoretic Perspective 270
*Rajasekar Krishnamurthy, Venkatesan T. Chakaravarthy,
 Jeffrey F. Naughton*

Generating Relations from XML Documents 285
Sara Cohen, Yaron Kanza, Yehoshua Sagiv

Query Containment

Containment for XPath Fragments under DTD Constraints 300
Peter T. Wood

XPath Containment in the Presence of Disjunction, DTDs,
 and Variables 315
Frank Neven, Thomas Schwentick

Decidable Containment of Recursive Queries 330
Diego Calvanese, Giuseppe De Giacomo, Moshe Y. Vardi

Containment of Conjunctive Queries with Safe Negation 346
Fang Wei, Georg Lausen

Consistency and Incompleteness

Probabilistic Interval XML 361
Edward Hung, Lise Getoor, V.S. Subrahmanian

Condensed Representation of Database Repairs for Consistent Query Answering	378
<i>Jef Wijsen</i>	
Typing Graph-Manipulation Operations	394
<i>Jan Hidders</i>	
Characterizing the Temporal and Semantic Coherency of Broadcast-Based Data Dissemination	410
<i>Evaggelia Pitoura, Panos K. Chrysanthis, Krithi Ramamritham</i>	
Data Structures	
An Efficient Indexing Scheme for Multi-dimensional Moving Objects	425
<i>Khaled Elbassioni, Amr Elmasry, Ibrahim Kamel</i>	
Nearest Neighbors Can Be Found Efficiently If the Dimension Is Small Relative to the Input Size	440
<i>Michiel Hagedoorn</i>	
Author Index	455