

26th International Conference on Database Theory

ICDT 2023, March 28–31, 2023, Ioannina, Greece

Edited by

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■ Contents

Preface	
<i>Floris Geerts and Brecht Vandevoort</i>	0:vii
Organization	
.....	0:ix
External Reviewers	
.....	0:xi
Contributing Authors	
.....	0:xiii
The ICDT 2023 Test-of-Time Award	
.....	0:xv

Invited Talks

A Researcher's Digest of GQL	
<i>Nadime Francis, Amélie Gheerbrant, Paolo Guagliardo, Leonid Libkin,</i> <i>Victor Marsault, Wim Martens, Filip Murlak, Liat Peterfreund, Alexandra Rogova,</i> <i>and Domagoj Vrgoč</i>	1:1–1:22
Compact Data Structures Meet Databases	
<i>Gonzalo Navarro</i>	2:1–2:16
Some Vignettes on Subgraph Counting Using Graph Orientations	
<i>C. Seshadhri</i>	3:1–3:10

Regular Papers

Enumerating Subgraphs of Constant Sizes in External Memory	
<i>Shiyuan Deng, Francesco Silvestri, and Yufei Tao</i>	4:1–4:20
An Optimal Algorithm for Sliding Window Order Statistics	
<i>Pavel Raykov</i>	5:1–5:13
Space-Query Tradeoffs in Range Subgraph Counting and Listing	
<i>Shiyuan Deng, Shangqi Lu, and Yufei Tao</i>	6:1–6:25
Constant-Delay Enumeration for SLP-Compressed Documents	
<i>Martín Muñoz and Cristian Riveros</i>	7:1–7:17
Degree Sequence Bound for Join Cardinality Estimation	
<i>Kyle Deeds, Dan Suciu, Magda Balazinska, and Walter Cai</i>	8:1–8:18
Absolute Expressiveness of Subgraph-Based Centrality Measures	
<i>Andreas Pieris and Jorge Salas</i>	9:1–9:18
Diversity of Answers to Conjunctive Queries	
<i>Timo Camillo Merkl, Reinhard Pichler, and Sebastian Skritek</i>	10:1–10:19

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The Complexity of the Shapley Value for Regular Path Queries <i>Majd Khalil and Benny Kimelfeld</i>	11:1–11:19
How Do Centrality Measures Choose the Root of Trees? <i>Cristian Riveros, Jorge Salas, and Oskar Skibski</i>	12:1–12:17
Size Bounds and Algorithms for Conjunctive Regular Path Queries <i>Tamara Cucumides, Juan Reutter, and Domagoj Vrgoč</i>	13:1–13:17
Uniform Reliability for Unbounded Homomorphism-Closed Graph Queries <i>Antoine Amarilli</i>	14:1–14:17
Approximation and Semantic Tree-Width of Conjunctive Regular Path Queries <i>Diego Figueira and Rémi Morvan</i>	15:1–15:19
Work-Efficient Query Evaluation with PRAMs <i>Jens Keppeler, Thomas Schwentick, and Christopher Spinrath</i>	16:1–16:20
Conjunctive Queries with Free Access Patterns Under Updates <i>Ahmet Kara, Milos Nikolic, Dan Olteanu, and Haozhe Zhang</i>	17:1–17:20
Finite-Cliquesets of Existential Rules: Toward a General Criterion for Decidable yet Highly Expressive Querying <i>Thomas Feller, Tim S. Lyon, Piotr Ostropolski-Nalewaja, and Sebastian Rudolph</i>	18:1–18:18
Generalizing Greenwald-Khanna Streaming Quantile Summaries for Weighted Inputs <i>Sepehr Assadi, Nirmal Joshi, Milind Prabh, and Vihan Shah</i>	19:1–19:19
Probabilistic Query Evaluation with Bag Semantics <i>Martin Grohe, Peter Lindner, and Christoph Standke</i>	20:1–20:19
On Efficient Range-Summability of IID Random Variables in Two or Higher Dimensions <i>Jingfan Meng, Huayi Wang, Jun Xu, and Mitsunori Ogihara</i>	21:1–21:18
The Consistency of Probabilistic Databases with Independent Cells <i>Amir Gilad, Aviram Imber, and Benny Kimelfeld</i>	22:1–22:19
Consistent Query Answering for Primary Keys and Conjunctive Queries with Counting <i>Aziz Amezian El Khaloui and Jef Wijsen</i>	23:1–23:19
A Simple Algorithm for Consistent Query Answering Under Primary Keys <i>Diego Figueira, Anantha Padmanabha, Luc Segoufin, and Cristina Sirangelo</i>	24:1–24:18

■ Preface

The 26th International Conference on Database Theory (ICDT 2023) was held in Ioannina, Greece, from March 28 to March 31, 2023.

The Program Committee has selected 21 research papers out of 49 submissions for publication at the conference. It has further decided to give the Best Paper Award to *The I/O Complexity of Enumerating Subgraphs of Constant Sizes* by Shiyuan Deng, Francesco Silvestri and Yufei Tao, and the Best Newcomer Paper Award to *An Optimal Algorithm for Sliding Window Order Statistics* by Pavel Raykov. We congratulate the winners!

Apart from the 21 regular papers, these proceedings include invited papers associated with the (shared) EDBT/ICDT keynotes by Leonid Libkin (University of Edinburgh & ENS Paris) and Gonzalo Navarro (University of Chile), as well as the invited paper associated with the ICDT invited tutorial by Seshadhri Comandur (University of California).

A committee formed by Wang-Chiew Tan, Diego Figueira, and George Fletcher has decided to give the Test-of-Time Award for ICDT 2023 to the two ICDT 2013 papers *A Theory of Pricing Private Data* by Chao Li, Daniel Y. Li, Gerome Miklau and Dan Suciu, and *Querying Graph Databases with XPath* by Leonid Libkin, Wim Martens and Domagoj Vrgoč.

We would like to thank all people who contributed to the success of ICDT 2023, including the authors of all submitted papers, keynote and invited tutorial speakers, and, of course, all members of the Program Committee as well as the external reviewers, for the very substantial work that they have invested over the two submission cycles of ICDT 2023. Their commitment and sagacity were crucial to ensure that the final program of the conference satisfies the highest standards. We would also like to thank the ICDT Council members for their support on a wide variety of matters, and the local organizers of the EDBT/ICDT 2023 conference, led by General Chairs Nikos Mamoulis and Evaggelia Pitoura, for the great job they did in organizing the conference and co-located events. Finally, we wish to acknowledge Dagstuhl Publishing for their support with the publication of the proceedings in the LIPIcs (Leibniz International Proceedings in Informatics) series.

Floris Geerts and Brecht Vandevoort
March 2023



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■ The ICDT 2023 Test-of-Time Award

In 2013, the International Conference on Database Theory (ICDT) began awarding the ICDT Test-of-Time (ToT) award, with the goal of recognizing one paper, or a small number of papers, presented at earlier ICDT conferences that have best met the “test of time”. In 2023, the award recognizes two papers selected from the proceedings of the ICDT 2013 conference that have had the highest impact in terms of research, methodology, conceptual contribution, or transfer to practice over the past decade. The award was presented during the EDBT/ICDT 2023 Joint Conference, March 28 – 31, 2023.

The 2023 ToT Committee consists of Wang-Chiew Tan, Diego Figueira, and George Fletcher. After careful consideration and soliciting external assessments, the committee has chosen the following contributions for the 2023 ICDT Test-of-Time Award:

A Theory of Pricing Private Data

Chao Li, Daniel Y. Li, Gerome Miklau and Dan Suciu

This paper presents a theoretical framework for monetizing private data which empowers individuals to control their data through financial means. In this framework, data owners are financially compensated for their loss of privacy where lower prices are assigned to noisier query answers. This framework adopts and extends prior techniques on data pricing and differential privacy. It is the first time an end-to-end perspective on data pricing, combining the problems of pricing and revenue allocation, was provided. This paper has widespread influence on research on data pricing both within and beyond the database community.

Querying Graph Databases with XPath

Leonid Libkin, Wim Martens and Domagoj Vrgoč

This paper presents a graph language called GXPath (short for Graph XPath) that strikes an interesting balance between expressiveness and complexity and is influential in the Graph Query Language (GQL) standard. GXPath permits expressive queries that can be efficiently evaluated and has a strong influence on GQL as well as SQL/PgQ (for querying graph databases in SQL) which are currently being finalized in the same ISO committee that maintains the SQL Standard. This paper showcases how theoretical work can be directly influential in industry and academic community consensus building around the upcoming Graph Query Language (GQL) standard.

Wang-Chiew Tan
Facebook AI

Diego Figueira
Université de Bordeaux

George Fletcher
Eindhoven University of
Technology (TU/e)

The ICDT Test-of-Time Award Committee for 2023



