

22nd International Conference on Database Theory

ICDT 2019, March 26–28, 2019, Lisbon, Portugal

Edited by

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Editors: Pablo Barcelo and Marco Calautti



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■ Preface

The 22nd International Conference on Database Theory (ICDT 2019) was held in Lisbon, Portugal, March 26–28, 2019. The proceedings of ICDT 2019 include an extended abstract of a keynote by Dan Olteanu (University of Oxford), an extended abstract of a keynote by Lise Getoor (University of California, Santa Cruz), a paper by Markus Kroetzsch (Technical University of Dresden) and coauthors based on his invited tutorial, a laudation concerning the ICDT 2019 Test of Time Award, and 21 research papers that were selected by the Program Committee from 67 submissions.

The Program Committee selected the paper *Counting Triangles under Updates in Worst-Case Optimal Time* by Ahmet Kara, Hung Q. Ngo, Milos Nikolic, Dan Olteanu and Haozhe Zhang for the ICDT 2019 Best Paper Award. Furthermore, a specially designated committee formed by Wenfei Fan, Magdalena Ortiz, and Ke Yi decided to give the Test of Time Award for ICDT 2019 to the paper *Automatic verification of data-centric business processes* by Alin Deutsch, Richard Hull, Fabio Patrizi, and Victor Vianu (originally published in ICDT 2009). We sincerely congratulate to the authors of these award winning papers!

We would like to thank all people who contributed to the success of ICDT 2019, including authors who submitted papers, keynote and tutorial speakers, and, of course, all members of the Program Committee, and the external reviewers, for the very dedicated work they have done over the two submission cycles of ICDT 2019. Their help and assistance were crucial to ensure that the final program of the conference keeps satisfying the highest standards.

We would also like to thank the ICDT Council members for their support on a wide variety of matters concerning ICDT, and the local organizers of the EDBT/ICDT 2019 conference, led by General Chair Helena Galhardas (Universidade de Lisboa, Portugal), for their constant help in the organization of the conference and some 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.

Pablo Barcelo and Marco Calautti
March 2019



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Paraschos Koutris	Benjamin Pullman	Haozhe Zhang

■ ICDT 2019 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 ICDT a decade earlier that have best met the "test of time". In 2019, the award recognizes a paper from the ICDT 2009 proceedings that has had the most impact in terms of research, methodology, conceptual contribution, or transfer to practice over the past decade. The award was presented during the EDBT/ICDT 2019 Joint Conference, March 26-29, 2019, in Lisbon, Portugal.

The 2019 ToT Committee consists of Wenfei Fan (chair), Magdalena Ortiz, and Ke Yi. After careful consideration and soliciting external assessments, the committee has chosen the following recipient of the 2019 ICDT Test of Time Award:

Automatic verification of data-centric business processes
Alin Deutsch, Richard Hull, Fabio Patrizi, Victor Vianu

The paper has been a cornerstone in the research on artifact-centric and data-aware processes. It opens up the possibility of verifying data-aware processes not only in niche cases but also in quite broad classes. It provides a formalization of IBM's artifact-based approach to business processes, and models arbitrary inputs from external users with infinite domains. This gives rise to processes that have infinite states and hence are impossible to verify through standard model checking techniques. In addition to this formalization, it investigates verification of properties in an extension of LTL over artifacts, which is challenging since it deals with infinite alphabets.

The paper has generated impact not only on database and business process communities, but also influenced artificial intelligence, verification and Web services. It has received over 250 citations coming from these diverse communities. In addition, its techniques have influenced theoretical work on fundamental aspects of languages over infinite alphabets.

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The ICDT Test-of-Time Award Committee for 2019



