

Editor's Notes

Welcome to the September 2017 issue of the ACM SIGMOD Record!

First of all, we welcome Pinar Tözün to join the editorial board of the SIGMOD Record as the new associate editor of the Surveys column.

The first column of this issue is the Database Principles column, featuring an article by Guagliardo and Libkin on correctness of SQL Queries on databases with nulls. Motivated by experimental evidence that null values in a database introduce false positive answers, this article surveys efficient approximation techniques for running SQL queries on data with nulls which come with correctness guarantees. It presents two recent approximation schemes and provides theoretical guarantees for both. For the latter scheme, it also presents experimental results showing that its real-life behavior in terms of the price of correctness falls in several major categories: among them, the first, and largest, group of queries incur a small price for correctness guarantees, while the last group incurs a significant performance penalty, which has to do with how commercial optimizers handle disjunctions in queries. These results point to a real opportunity to fix many of the issues related to the handling of nulls in RDBMSs, at a reasonable cost in terms of query evaluation.

The Research column features an article by Pham et al. on uninterruptible migration of continuous queries. The elasticity brought by cloud infrastructure provides a solution for a data stream management system to handle variable workloads through scale out when heavily loaded, or scale in otherwise. Key to such a solution is an efficient mechanism that can migrate a query from one node to another with zero downtime and minimum overheads on the compute nodes. The article by Pham et al. presents a migration protocol, named UniMiCo, that satisfies those requirements and extends the state of the art with multiple stateful operators per continuous query and a variety of window definitions.

The Systems and Prototypes column features an article on stream processing for edge clouds by Esteves et al. An edge cloud is a network fabric that resides between the core network and the access network for the end user and consists of a geographically distributed network of small data-centers serving a limited number of end users. Common stream processing systems (SPS) such as Spark are designed to operate a stream processing cluster within a single datacenter, but not to span multiple data-centers (in different geographic areas). To support stream processing in edge clouds, this article presents a system based on an earlier prototype, CHive, which orchestrates multiple SPS clusters, one for each datacenter, to collectively compute a query plan. An important feature of the system is to decouple the CHive query planner and optimizer from its underlying runtime environment and support multiple runtime engines that may suit different applications.

The Distinguished Profiles column features Ron Fagin from the IBM Almaden Research Center. Ron is an IBM Fellow, Fellow of ACM and IEEE, and member of the National Academy of Engineering and the American Academy of Arts and Sciences. He has won the IEEE McDowell Award (the highest award of the IEEE Computer Society), the SIGMOD Edgar F. Codd Innovations Award, and most recently, the Gödel Prize (the highest award for a paper in Theoretical Computer Science). In this interview, Ron discusses the most important scientific results achieved in his career, including Fagin's Algorithm, Threshold Algorithm, and Fagin's 0-1 Law. He also discusses his mission as an IBM Fellow, that is, to convince theoreticians that they will prove better theorems and they will do more interesting work if they keep talking to practitioners.

The Centers column features an article by Wolfgang Lehner on the Database Systems Group at Technische Universitat Dresden, Germany. The Dresden Database Systems Group focuses on the advancement of data management techniques from a system's perspective as well as information management's perspective. The group is involved in research projects ranging from activities to exploit modern hardware for scalable storage engines to advancing statistical methods for large-scale time series management.

The issue finally closes with a call for nomination of ICDT 2018 Test-of-Time Award, which is due on November 1, 2017.

On behalf of the SIGMOD Record Editorial board, I hope that you enjoy reading the September 2017 issue of the SIGMOD Record!

Your submissions to the SIGMOD Record are welcome via the submission site:

<http://sigmod.hosting.acm.org/record>

Prior to submission, please read the Editorial Policy on the SIGMOD Record's website:

<https://sigmodrecord.org>

Yanlei Diao

September 2017

Past SIGMOD Record Editors:

Ioana Manolescu (2009-2013)	Alexandros Labrinidis (2007-2009)	Mario Nascimento (2005-2007)
Ling Liu (2000-2004)	Michael Franklin (1996-2000)	Jennifer Widom (1995-1996)
Arie Segev (1989-1995)	Margaret H. Dunham (1986-1988)	Jon D. Clark (1984-1985)
Thomas J. Cook (1981-1983)	Douglas S. Kerr (1976-1978)	Randall Rustin (1974-1975)
Daniel O'Connell (1971-1973)	Harrison R. Morse (1969)	