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EDITORIAL

I am pleased to present the second issue of the Proceedings of the VLDB Endowment (PVLDB), Volume 14. PVLDB publishes premium-quality articles that address intellectually challenging topics in database systems. Submissions are permitted at the beginning of each month and reviewed through a journal-style process.

This volume collects 11 papers under the "regular search" category. Ding et al. propose a multidimensional index whose construction considers both the data and the query distribution. They show that the index is more amenable to skewed queries than the previous solutions. Kang et al. revisit the computational cost of deep neural networks and discuss the possibility of achieving higher efficiency by reducing data resolution and increasing the neural network's complexity. Aiming to integrate adaptive query processing (AQP) with just-in-time (JIT) query compilation, Menon et al. design the permutable compiled query (PCQ) technique to lower the re-compilation overhead in query plan modification. Min et al. tackle the cache-fault issue in performing graph traversals using GPUs. They alleviate the issue by allowing GPU threads to access data in the main memory directly. Zhang et al. consider the persistence estimation problem on data streams and describe the "on-off sketch" to achieve accurate estimation under a tight space budget. Tran et al. propose an algorithm to find distance-based outliers on data streams with a small memory footprint. Sun et al. discuss the benefits of combining two existing paradigms for answering subgraph queries: the exploration approach and the worst-case optimal join approach. Xia et al. investigate transaction logging for in-memory multi-core systems and describe how to accomplish the purpose by tracking the dependency among transactions. Paul et al. describe a JIT-based approach that improves the performance of GPU-based query algorithms by increasing their hardware utilization. Wang et al. study access methods to support spatiotemporal queries on trajectory data. They introduce the partition-wise predictive quantizer (PPQ) technique to enable effective filtering with attractive precision guarantees. Hu et al. propose the aggregated deletion propagation problem, where the objective is to remove the least number of tuples to shrink a query result by a designated amount. They establish several results on the problem's computational hardness.

In addition, the volume features a paper in the "scalable data science" category where Pope et al. explore how to use data science techniques to predict the server loads in Microsoft Azure for automatic resource allocation. The volume also includes a paper by Wang et al. in the "experiments, analyses, and benchmarks" category. They present an experimental evaluation of the k-means algorithm's existing implementations and analyze their advantages/disadvantages from different perspectives.

All the papers will be presented at the 47th International Conference on Very Large Data Bases, 2021, in Copenhagen. I sincerely thank all the authors for submitting their work and all the reviewers for their outstanding service reviewing the submissions. I hope that the reader will find this volume enjoyable.

Yufei Tao
PVLDB Associate Editor