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LETTER FROM THE EDITORS IN CHIEF

Welcome to the fourth issue of PVLDB, Volume 15. This issue contains 20 papers in total including 13 regular research papers, 6 scalable data science (SDS) papers, and 1 experiments analysis & benchmark (EA&B) paper. Particularly, it covers papers in distributed database systems, machine learning & applied AI for data management, spatial & temporal data management, database engines, data privacy and security, data quality, data mining, and information retrieval. All the papers in this issue are accepted after two rounds of review to achieve a high quality.

The first paper of this issue falls into the EA&B category. Han et al. comprehensively evaluate the approaches for cardinality estimation in a real DBMS. Next, Zhang et al. propose high-performance caches using RDMA-accessible remote memory. Boissier studies the problem of data encoding and introduces workload-driven approaches to automatically determine memory budget-constrained encoding configurations. Tan et al. design bipartite graph indexes for fast neural ranking. Gan et al. present BAGUA, an MPI-style communication library that provides a collection of primitives to support state-of-the-art system relaxation techniques of distributed training. Chan et al. propose SWS for spatial-temporal kernel density visualization. Liu et al. propose the projected federated averaging with heterogeneous differential privacy. Haimovich et al. introduce a feature-based approach for predicting the popularity of social media content in real-time. Doshi et al. present LANNS, a platform for approximate nearest neighbor search, which scales for web-scale datasets. Pena et al. explore an efficient approach to detect violations of denial constraints. Yu et al. introduce Chukonu, a native big data framework that re-uses critical big data features provided by Spark. Jin et al. present COMET, a memory-efficient deep learning training framework by using error-bounded lossy compression. Li et al. study the federated matrix factorization problem with privacy guarantee. Duong et al. propose a framework for scalable graph embedding based on MapReduce. Paul et al. focus on the workload characterization problem and present query plan encoders that learn essential features from query plans. Modi et al. propose query optimization techniques that reduce the cost of stateful operators in query executions. Sinthong et al. introduce data-quality-aware dataframes. Agarwal et al. provide tools that assist database administrators in GDPR-compliant data extraction for legacy databases. Wu et al. introduce AutoCTS for automated correlated time series forecasting. At last, Sudhir et al. propose CopyRight, a layout-aware partial replication engine to improve the query performance of in-memory database systems.

All the papers in this issue will be presented at the 48th International Conference on Very Large Data Bases, 2022, in Sydney. We sincerely thank all the authors for submitting their work and all the reviewers for their outstanding service in reviewing the submissions. We hope that the reader will find this volume enjoyable.

Juliana Freire and Xuemin Lin
Editors-in-Chief of PVLDB Volume 15
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