

## Editorial

This issue of the twelfth volume of JIDM comprises extended versions of papers published in the proceedings of the Short, Vision, and Industrial track of the Brazilian Symposium on Databases (SBBD) in 2020. SBBD is the most important forum for discussing recent research outcomes in the database area in Latin America. The track dedicated to Short, Vision, and Industrial paper aims at giving visibility to relevant ongoing research in the area, conducted in academia and industry. This track also welcomes visionary ideas that may trigger further discussion and research endeavors. This issue comprises 12 articles submitted and reviewed by experts of the Brazilian database community. Covered topics include data modeling, provenance-related data management, privacy issues, and a wide variety of search-related challenges, ranging from indexing to mechanisms for supporting semantic searches.

This special issue starts with the article entitled “An Approach for Schema Extraction of NoSQL Columnar Databases: the HBase Case Study,” by Angelo Augusto Frozza, Eduardo Dias Defrey, and Ronaldo dos Santos Mello. Their paper introduces a new recursive approach for schema extraction from columnar NoSQL databases, validated in a case study involving HBase.

The two next papers cover provenance issues. Finding the best-performing machine learning models is a difficult task. In the second article of this special issue, Liliame Kunstmann, Débora Pina, Filipe Silva, Aline Paes, Patrick Valduriez, Daniel de Oliveira, and Marta Mattoso address this problem by introducing Keras-Prov and Keras-Prov++, dashboards for supporting online hyperparameter fine-tuning. Their work is entitled “Online Deep Learning Hyperparameter Tuning based on Provenance Analysis.” The third article of this special issue presents MINERVA (Multimodal busINEss pRoVenance Analysis), an approach that explores multimodal data provenance based on collaboration analysis to improve business processes. The title of their article is “Multimodal Provenance-based Analysis of Collaboration in Business Processes,” by Maria Luiza Falci, Andréa Magalhães, Aline Paes, Vanessa Braganholo, and Daniel de Oliveira.

We have three articles covering privacy issues. The fourth article of this special issue, authored by Javam C. Machado and Paulo R. P. Amora, is entitled “The Impact of Privacy Regulations on DB Systems.” In their paper, the authors discuss the implications of existing regulations dedicated to privacy issues and their impact on existing database management systems. Their work also identifies promising research opportunities in the area. The next article is “Privacy-preserving of patients with Differential Privacy: an experimental evaluation in COVID-19 dataset,” by Manuel E. B. Filho, Eduardo R. Duarte Neto, and Javam C. Machado. Their work addresses the trade-off related to ensuring privacy while maintaining the utility of data. It investigates differentially private mechanisms applied to queries associated with health data of patients infected with the coronavirus. The sixth article is entitled “Private Reverse Top-k Algorithms Applied on Public Data of COVID-19 in the State of Ceará.” Their article introduces a differentially private reverse top-k query approach, which is validated on public data for COVID-19 in the State of Ceará. The authors of this work are Maria de Lourdes M. Silva, Iago C. Chaves, and Javam C. Machado.

From this point on, this special issue covers several proposals related to the design, implementation, and validation of effective and efficient searchers. The article entitled “Semantic Search to Foster Scientific Findability: A Systematic Literature Review,” authored by Thiago Gottardi, Claudia Bauzer Medeiros, and Julio Cesar Dos Reis, surveys existing initiatives for supporting the search of scientific papers, data, and processes. Their systematic literature review also identifies existing research gaps that demand the attention of the database community. The eighth article of this special issue proposes a new approach for modifying the way query results are presented. The goal is to improve users’ experience in searches on RDF knowledge bases. João Pedro V. Pinheiro, Marco A. Casanova, and Elisa S. Menendez are the authors of this work entitled “Query Answer Reformulation over Knowledge Bases.” The next article, entitled “Empowering Natural Language Interfaces to Databases with Aggregations,” by Alexandre F. Novello and Marco A. Casanova, presents new approaches for coping with aggregation questions in the implementation of natural language interfaces for databases. How

to perform keyword searches over databases is the challenging research problem addressed in the article “A Platform for Keyword Search and its Application for COVID-19 Pandemic Data,” by Yenier T. Izquierdo, Grettel M. García, Melissa Lemos, Alexandre Novello, Bruno Novelli, Cleber Damasceno, Luiz André P.P. Leme, and Marco A. Casanova. Their work introduces DANKE, a platform to support such searches.

Finally, the next two articles focus on efficiency aspects. The article “Query co-planning for shared execution in Key-Value Stores,” by Josué Ttito, Renato Marroquín, Sergio Lifschitz, Lewis McGibney, and José Talavera, introduces a new segment tree data structure, named Updatable Interval Tree, to support efficient execution of range queries on key-value stores. Johnny Marcos S. Soares, Luciano Barbosa, Paulo Antonio Leal Rego, Regis Pires Magalhães, and Jose Antônio F. de Macêdo, in turn, propose a new scheme, which explores the well-known inverted index, in the search of fingerprints. Their work is entitled “Using Inverted Index for Fingerprint Search.”

The JIDM Editorial board is very thankful to all authors and reviewers for their valuable contributions towards the creation of this rich special issue. We wish you all pleasant and insightful readings.

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