

Editorial

This issue of the thirteenth volume of JIDM comprises extended versions of papers published in the proceedings of the Brazilian Symposium on Databases (SBBD) in 2021. SBBD is the most relevant event in Latin America for discussing research and cutting-edge technologies in the area of databases. This issue includes eight articles, addressing research problems in the areas of data integration, spatial databases, query processing, entity resolution and relatedness, and data visualization and analysis.

This special issue starts with articles that address data integration problems. The first article is entitled “Integrating Heterogeneous Stream and Historical Data Sources using SQL,” by Jefferson Amará, Victor Ströele, Regina Braga, Mário Dantas, and Michael Bauer. Their paper introduces a new framework to support real-time integration of streaming and historical data. The second paper focuses on applications tailored for Smart Cities. The work of Murilo B. Riveiro and Kelly R. Braghetto, entitled “A Scalable Data Integration Architecture for Smart Cities: Implementation and Evaluation,” proposes a microservice architecture to foster the development of solutions for integrating heterogeneous data.

The next paper covers relevant studies addressing spatial approximations in spatial database systems. In their systematic review, Pedro Gabriel Kohl Bertella, Yuri Kaszubowski Lopes, Rafael Alves Paes de Oliveira, and Anderson Chaves Carniel overview existing solutions for optimizing the performance of spatial queries. Their work is entitled “A Systematic Review of Spatial Approximations in Spatial Database Systems.”

Performing hash join operations is a challenging task. In the fourth article of this special issue, Marisa S. Franco, Simone Dominico, Tiago R. Kepe, Luiz C. P. Albini, Eduardo C. de Almeida, and Marco A. Z. Alves address this problem by investigating the performance of implementations of this operator on Software-Defined Network (SDN) switches. Their work is entitled “Evaluation of hash join operations performance executing on SDN switches: a cost model approach.”

The fifth article of this special issue presents ACERPI-Block, an approach that implements blocking strategies to support entity resolution tasks related to ordinance documents. The title of the article is “ACERPI-Block: Applying Blocking Techniques to the ACERPI Approach” and it was co-authored by Christian Schmitz, Jonathan Martins, Serigne K. Mbaye, Edimar Manica, and Renata Galante.

In the paper “A framework to compute entity relatedness in large RDF knowledge bases,” Javier Guillot Jiménez, Luiz André P. Paes Leme, Yenier Torres Izquierdo, Angelo Batista Neves, and Marco A. Casanova present DCoEPinKB (Distributed way of understanding the Connectivity of Entity Pairs in Knowledge Bases), a framework to support the execution of different path search strategies in large RDF collections.

The next two papers address exploratory data analysis and visualization challenges. Both handle usage scenarios related to data associated with the COVID-19 pandemic. The article “*Sketch*⁺ for Visual and Correlation-Based Exploratory Data Analysis: A Case Study with COVID-19 Databases” introduces a set of techniques that support data exploration by means of correlation analysis, similarity searches, and data visualization. All those features are embedded in a tool. The authors of this work are Mirela T. Cazzolato, Lucas S. Rodrigues, Marcela X. Ribeiro, Marco A. Gutierrez, Caetano Traina Jr., and Agma J. M. Traina.

How to simulate and analyze infection spread using temporal networks is the challenging research problem addressed in the article “A visualization approach for simulating and analyzing infection spread dynamics using temporal networks,” by Jean R. Ponciano, Gabriel P. Vezono, and Claudio D. G. Linhares. Their work introduces a strategy to simulate social distancing and a visualization method to support the understanding of spread dynamics.

The JIDM Editorial board thanks reviewers for their efforts in providing timely insightful comments.

We congratulate the authors for their research achievements, and we thank them for sharing those outcomes in JIDM.

Enjoy your reading!

Maristela Holanda
Editor-in-Chief

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SBBB Full Paper Special Issue Editor