

## Editor's Note

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This issue presents five manuscripts: four related to artificial intelligence and one to microservice architectures. A total of 12 different authors from 5 different universities in Argentina, Brazil, Egypt, and Nepal were involved.

*Explainable Artificial Intelligence: Analysis of Methodologies and Applications* by María Cecilia Pezzini and Claudia Pons. Explainability is crucial in fields like healthcare, finance, and security, as black-box models can reduce trust. This literature review discusses recent advances in eXplainable Artificial Intelligence (XAI) across structured data, computer vision, and natural language processing. Thirty articles from 2022 to 2024 were reviewed, comparing new approaches with established methods like LIME and SHAP. The review identifies new innovations and ongoing challenges while emphasizing the need for reproducible techniques to enhance transparency and trust in AI systems.

*Automatic Text Summarization: A Review of Approaches, Challenges, and Future Directions* by Sara Zayed, Mostafa Ezzat, and Hesham Hefny. Automatic text summarization (ATS) is an important field in natural language processing that aims to shorten long documents into clear and meaningful summaries. Manual summarization is slow and expensive, leading to the exploration of extractive, abstractive, and hybrid methods. This review covers both traditional methods and recent advancements using machine learning and large language models like GPT-4. It also discusses challenges, strengths, and weaknesses of each approach, along with evaluation methods and future opportunities.

*Evaluation of Approaches Based on the BERT Model for Opinion Mining about the Cachaca Beverage* by Thiago Salles Santos, Mozar Jose Brito, and Denilson Alves Pereira. Opinion mining analyzes user opinions on e-commerce and social media, aiding decisions, product monitoring, and marketing strategies. Research is limited for the Portuguese language. This work evaluates BERT-based approaches for opinion mining in Portuguese, specifically for the beverage Cachaça, achieving high classification scores in evaluation tests.

*Machine Learning for Site Adaptation of Satellite-Derived Solar Irradiance in Northwestern Argentina* by Rubén Ledesma and Germán Salazar. Accurate estimation of global horizontal irradiance (GHI) is important for solar energy assessment, especially in areas with few ground measurements. This study tests three machine learning models—Simple Linear Regression (SLR), Extreme Gradient Boosting (XGB), and Multilayer Perceptron (MLP)—using satellite-derived GHI data from two sources in Northwestern Argentina. Results show LSA-SAF data had lower errors than CAMS, with SLR providing robust results. Simpler models may perform well, and improving data quality could be more beneficial than using complex models.

*Scalability in Microservices: A Systematic Literature Review* by Nishal Gurung, Sushil Shrestha, and Rajani Chulyadyo. The scalability of microservice architecture is vital for modern software but comes with challenges due to their complexity. This study reviews literature on microservices scalability, analyzing 55 scholarly articles. It highlights a focus on autoscaling strategies, particularly those using machine learning. Key challenges include metrics collection, dynamic scaling decisions, and balancing performance with cost. Future research should aim at creating effective autoscaling systems for real-world complexities and dynamic workloads.

Presenting this issue to the readership, we especially thank the members of the Editorial staff, the authors, the reviewers, and also, the universities that collaborated with this edition.

**Enzo Rucci**

**Editor-in-Chief**

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