

## Preface to the CLEI 2022 Special Issue

The present issue of CLEIej is devoted to extended and revised papers of selected works presented at the XLVIII Latin American Computing Conference (CLEI 2022), held at Universidad del Quindío in Armenia, Colombia, as a hybrid event from 17<sup>th</sup> to 21<sup>st</sup> October 2022.

The CLEI 2022 conference included 9 symposia on different computer science and informatics areas, 4 associated events, 1 associated conference, the first edition of ELI (Latin-American School in Informatics) and the Journal First track. In particular, the following symposia were organized within CLEI 2022:

- Latin American Symposium on Computer Graphics, Virtual Reality and Image Processing (SLCGRVPI).
- Latin American Symposium on Informatics and Society (SLIS).
- Latin American Symposium on Infrastructure, Hardware and Software (SLIHS).
- Latin American Symposium on Software Engineering (SLISW).
- Latin American Symposium on Operations Research and Artificial Intelligence (SLIOIA).
- Latin American Symposium on Business Processes, Architectures and Organizational Systems (SLPNASO).
- Latin American Symposium on Data and Information Management (SLMDI).
- Latin American Symposium on Computational Theory (SLTC).
- XXX Ibero-american Symposium on Higher Education in Computing (SIESC).

In total, 115 submissions were received for these symposia. The contributions were subjected to a rigorous review process resulting in 41 papers accepted for symposia, with an acceptance rate of ~34%. Each paper was reviewed by at least 3 members of the Program Committee of the corresponding symposium.

The authors of the 9 best papers of all symposia, considering their review evaluations by the symposia Chairs, were invited to extend their works and submit them to a special issue of CLEIej. Of these, 8 papers were extended and submitted, and went through another detailed review process with invited reviewers from CLEI 2022, which resulted in 5 papers being accepted for final publication. In the following paragraphs, the papers are presented and organized in 4 groups according to their general research areas.

The first group encompasses 1 paper related to areas of artificial intelligence including neural networks and optimization algorithms:

- The paper untitled “Analysis and design of algorithms for the manufacturing process of integrated circuits” describes the proposed methods for minimization of the total distance traveled by the robotic arm to pick a certain number of chips up, from a wafer, and pack them to slots on a strip, establishing movement rules and considering movement restrictions of the robotic arm.

The second group encompasses 2 papers related to areas of data and information management:

- The contribution “Extended Analysis of the Semantic Shift in Diachronic Word Embeddings for Spanish Before and After COVID-19” makes an interesting and adequate combination of clustering techniques and emotion analysis to understand how the world has changed due to what has been experienced in the covid-19 pandemic.
- The work untitled “Management System for the Fattening Process of Bovines in Rotational Grazing using Diagnosis and Recommendation Systems” presents a system with two main components: 1) a diagnostic component based on machine learning to predict the weight loss or gain of bovines; 2) a recommendation component based on a classifier model to estimate the best pasture for a given paddock.

The third group includes 1 paper addressing different aspects of business processes, architectures, and organizational systems:

- In the paper “Gateways-based Interoperability for DLT” the authors present a solution and an evaluation for interoperability in distributed ledger technologies (DLT). The authors establish a solution based on gateways and perform an evaluation exchanging data between two different blockchains: Fabric and Corda.

Finally, the fourth group includes 1 paper focusing on higher education in computing:

- The paper “Proof Assistant Based on Computational Logic to Assist the Learning of Propositional Logic and Boolean Algebras” describes a proof assistant, including the improvements/extensions from previous versions, and the results from experiments with students (in actual lessons) in Florida International University (FIU)

We would like to deeply thank all CLEI 2022 Symposia chairs, who worked with us through the paper review process for the conference, and in the evaluation and selection of the 9 best papers to be invited to extend their work for this special issue.

We would also like to thank and acknowledge the hard work of the reviewers who volunteered to evaluate the contents and quality of the papers published in this special issue.

Finally, we would like to thank all the authors for accepting our invitation to extend and revise their conference submissions, improving their papers with feedback from reviewers to finally present these high-quality extended versions of their work.

We hope you enjoy this special issue, which contributes to the dissemination of key research work of our Latin American community, as much as we do!

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CLEIej Invited Editors for CLEI 2022 Special Issue