

Preface to the Iberoamerican Human-Computer Interaction Conference 2024 Special Issue

The present issue of CLEI Electronic Journal (Volume 28, Issue 1, 2025) is devoted to extended and revised papers of selected works presented at the X Ibero-American Human-Computer Interaction Conference, took place in Pereira, Colombia, from June 4th to 7th, 2024. The Technological University of Pereira, Colombia, was responsible for organizing the event under the central theme 'Transversality of Human-Computer Interaction: impact across multiple disciplines'. Researchers in the field of Human-Computer Interaction from Latin America and the Iberian Peninsula gathered both in person and remotely. This edition featured six workshops in addition to the main track:

- 6th Workshop on Intelligent Interactive Systems
- 4th Workshop on Interaction in Digital Games and Gamification
- 3rd Workshop on Industry 4.0 and HCI
- 3rd Workshop on Collaborative Work and Collaborative Learning
- 2nd Workshop Cognition and Interaction
- 1st Workshop on Accessibility and Inclusion

We were delighted to receive an invitation from the CLEI Journal to expand a selection of the best papers accepted and presented at the event. Thus, we present a special issue featuring papers from different areas of Human-Computer Interaction, involving researchers from different countries. Five extended papers that underwent a rigorous evaluation and approval process are included, covering topics such as Industry 4.0 technologies in SMEs (small and medium-sized enterprises), AI (Artificial intelligence) maturity models, user experience (UX) and usability principles, a social network for adolescents with Autism Spectrum Disorder (ASD) and UX in agile development. These studies highlight the importance of enhancing digital skills, improving user interaction, and fostering social inclusion through tailored technological solutions.

The paper "SME users in Industry 4.0 Study of the Metalworking Industry in Argentina" investigates the adoption of Industry 4.0 technologies in small and medium-sized enterprises (SMEs) within Argentina's metalworking sector. It analyzes the level of technological maturity in various functional areas, such as logistics, production, sales, management, accounting, and engineering, using an expanded version of the InTICs® methodology. The study reveals that most SMEs exhibit a medium level of technological development, with microenterprises lagging behind in digital transformation. Key challenges include limited financial resources, resistance to change, and a lack of specialized training. The findings highlight the need for targeted strategies to enhance digital skills, increase the adoption of advanced technologies, and align business processes with the evolving demands of Industry 4.0. The study also emphasizes the critical role of human factors in digital transformation, suggesting that tailored training programs and policy interventions are necessary to support SMEs in integrating emerging technologies effectively.

The second paper, "A Comprehensive and Structured Maturity Model for Measuring AI

Adoption Levels in Industry 4.0" presents a detailed framework for evaluating the integration of AI within Industry 4.0 contexts. It introduces a maturity model that assesses AI adoption across various dimensions, including organizational strategy, technology, processes, and human factors. The model aims to provide a benchmark for companies to gauge their readiness and proficiency in implementing AI, offering actionable insights and recommendations for continuous improvement. By leveraging established maturity models and incorporating AI-specific criteria, the study addresses the gaps in existing models and supports organizations in their digital transformation journeys, enhancing efficiency, competitiveness, and innovation in industrial processes.

The third paper, "Analysis and Optimization of the Usability of E-Commerce Platforms through Evaluation Heuristics" extends previous research on usability heuristics by validating and refining a set of heuristics specifically designed for e-commerce platforms. Through detailed experimentation involving international expert evaluators, the study identifies key usability strengths and weaknesses of an e-commerce platform, leading to the optimization of heuristic questions to better align with user needs. The validated heuristics, comprising 15 guidelines and 60 questions, provide a comprehensive framework for quantifying usability. The findings contribute to the ongoing enhancement of e-commerce platform usability and offer valuable insights for the usability and user experience research community.

The fourth paper, "ASD: Interaction and Socialisation through an Adapted Social Network" explores the development and evaluation of a social network platform designed specifically for adolescents with ASD. The study highlights the increasing prevalence of ASD and the potential of digital technology to enhance social and emotional skills in autistic individuals. The platform, named "Hola," incorporates accessibility and usability features to facilitate communication and social interaction among users. The development process involved iterative design, usability testing, heuristic evaluation, automated accessibility checks, and content evaluation by an ASD specialist. The findings suggest that the platform effectively promotes social inclusion and offers valuable insights for improving digital tools aimed at supporting individuals with ASD.

Finally, the last paper, "How can UX requirements be part of the acceptance criteria specification? Findings from a case study with startups" investigates the integration of UX requirements into acceptance criteria (AC) within user stories (US) in agile software development. The study introduces the ACUX guide, designed to assist software teams in documenting UX requirements effectively. Conducted with two startup teams, the case study reveals that ACUX enhances team communication, aids in the detailed specification of UX requirements, and reduces the need for rework by addressing UX considerations early in the development process. The findings highlight the guide's role in improving the quality of US/AC and its potential to be integrated into various stages of software development.

After presenting the theme of each paper, we would like to thank César Collazos for his enthusiasm, ability to execute, and for bringing people together for a common purpose: the Ibero-American Human-Computer Interaction Conferences and the HCI-Collab network. We also extend our gratitude to the editor of this journal for giving us the opportunity to publish this Special Session with selected papers from the X Ibero-American Human-Computer Interaction Conference. Likewise, to the authors for their efforts in expanding their papers and meeting the journal's requirements in a short period of time. Finally, we want to express a special thank you to the reviewers who accepted the challenge of carrying out their work in a short time frame but with great quality.

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