



CibSE 2023

XXVI Congreso Iberoamericano en Ingeniería de Software
XXVI Congresso Ibero-Americano em Engenharia de Software
XXVI Ibero-American Conference on Software Engineering
Montevideo, Uruguay, April 24 - 28, 2023

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Preface

On behalf of the CibSE 2023 Organizing Committee, we are proud to present the proceedings of the 26th Iberoamerican Conference on Software Engineering (CibSE 2023). CibSE has provided a forum to present recent advances in the practices for the engineering of software-intensive systems since 1998. This year the conference was hosted by the Universidad de la República in Montevideo, Uruguay, which was a perfect scenario to make this high-quality event possible.

In a society increasingly relies on software systems for our daily activity (e.g., in communication, finance, healthcare, and transport), the use of adequate engineering practices in the form of methods, processes, and tools throughout the lifecycle of these systems becomes essential to ensure their suitability. In this context, CibSE is the leading research forum on Software Engineering (SE) in Ibero-America, which promotes high-quality scientific research and, thus, supports the researchers in this community in publishing and discussing their work. In addition, the conference fosters collaboration and cross-fertilization among academics, students, and practitioners from the industry.

Sixty papers were submitted in this edition of the conference. Each submission was reviewed by at least three members of the Program Committee, formed by leading experts. After a careful peer-review process, 18 papers were finally selected (30% acceptance rate). Five distinguished papers were invited to submit an extended version to the *Science of Computer Programming* journal, and the best paper received an award certificate. In addition to the 18 original papers, three papers were accepted in the *Journal First* category, offering an opportunity for the authors to discuss their work with the community as well as to enrich the CibSE technical program.

CibSE 2023 hosted the Doctoral Symposium, which aims at bringing together doctoral students working on foundations, techniques, tools, and applications of Software Engineering and giving them the opportunity to present and discuss their research in a constructive and international atmosphere where a board of experts discuss with the students to suggest new perspectives and improvements to the PhD theses. Six ongoing doctorate research projects were presented. Moreover, prof. Guilherme Travassos. (Federal University of Rio de Janeiro, Brazil) presented the keynote “Why, for what, for whom, and how to conduct useful, robust, and reliable Software Engineering research”.

CibSE 2023 also hosted the 6th edition of the Ibero-American School on Software Engineering (EIBAIS). EIBAIS aims at promoting a forum for discussions regarding Software Engineering, its related technologies and theoretical foundations, allowing the participation of practitioners, undergraduate and graduate students, and researchers.

This year, ElbAIS presented four tutorials, discussing general and specific topics of Software Engineering together with cross-fertilization with other technology disciplines:

Data and Big Data Quality in the context of Software Engineering (Adriana Marotta, Universidad de la República, Uruguay), Quantum Software Engineering (Ignacio García-Rodríguez de Guzmán, Universidad de Castilla-La Mancha, Spain), Software Architecture Challenges of ML-Enabled Systems (Ipek Ozkaya, Carnegie Mellon University Software Engineering Institute (SEI)).

CibSE 2023 included the Industry Talks, which aims at providing the industry and practitioners means to discuss and work together in exploring how Software Engineer processes, methods, techniques, and tools can provide the industry with better solutions. Seven experts from the industry shared their experience with the CibSE audience.

The conference had two renowned keynote speakers. Ipek Ozkaya (Carnegie Mellon University Software Engineering Institute (SEI)), discussed the opportunities and implications of AI-Augmented Software Development. Ignacio García-Rodríguez de Guzmán (Universidad de Castilla-La Mancha, Spain), presented an interesting sight about the intersection of software engineering practices in the development of future quantic computing applications.

Finally, we would like to thank all people who contributed to make this event possible. The quality of the technical program is a result of the dedication of the members of the Program Committee and additional reviewers. We would also like to thank all members of the organizing committee, authors, keynotes, panelists, instructors, session chairs and all the participants for their collaboration in making CibSE 2023 a success. We express our gratitude to the CibSE Steering Committee for their great support, particularly to Marcela Genero and Renata Guizzardi. Finally, we are thankful for the opportunity of serving as chairs for this conference.

Giovanni Giachetti and Breno de França
CibSE 2023 PC Chairs

Main Conference

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Teresa Baldassarre - University of Bari - Italy

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What can we learn from surveys on the importance of software development productivity factors?

Magne Jørgensen (Simula Metropolitan Center for Digital Engineering, Norway)

Exploring Terminological Consistency of Project Management Glossaries

María Fernanda Papa (GIDIS_Web, Facultad de Ingeniería, UNLPam), Pablo Becker (GIDIS_Web, Facultad de Ingeniería, UNLPam) and Luis Olsina (National University of La Pampa)

Supporting Software Evolution Actions with Process Mining

Daniel Calegari (Universidad de la República Uruguay) and Andrea Delgado (Universidad de la República Uruguay)

Patterns in Microservice Architecture: A Grey Literature Review

Fabio Gomes Rocha (Universidade Federal de Sergipe), Michel Soares (Universidade Federal de Sergipe) and Guillermo Rodriguez (ISISTAN (UNICEN-CONICET) Research Institute)

Can Multi-Agent Consensus Improve Quality Tradeoffs in Software Architecture Optimization?

J. Andres Diaz-Pace (ISISTAN Research Institute – UNCPBA University & CONICET Tandil), Santiago Vidal (ISISTAN Research Institute – UNCPBA University & CONICET Tandil), Antonela Tommasel (ISISTAN Research Institute – UNCPBA University & CONICET Tandil), Sebastian Frank (University of Hamburg) and André van Hoorn (University of Hamburg)

Exploratory Analysis of the Structural Evolution of public REST APIs

Nicolás Robles (Universidad de los Andes, Colombia), Nicolás Potes (Universidad de los Andes, Colombia), Kelly Garcés Pernet (Universidad de los Andes, Colombia), Javier Luis Canovas Izquierdo (IN3 - UOC; ICREA) and Jordi Cabot (IN3 - UOC; ICREA)

Cross-language Clone Detection for Mobile Apps

Stephannie Jimenez (Universidad de los Andes), Gordana Rakic (University of Novi Sad), Silvia Takahashi (Universidad de los Andes) and Nicolás Cardozo (Universidad de los Andes)

Using Software Architecture Descriptions to Detect Architectural Smells at Design Time

Everton Cavalcante (Federal University of Rio Grande do Norte) and Thais Batista (Federal University of Rio Grande do Norte)

Software Engineering Education in the DevOps Era: Experiences and Recommendations

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Mi Superpoder es la Programación: Una herramienta para la enseñanza de la programación en niños y jóvenes

Erika J. Gutierrez Beltrán (Pontificia Universidad Javeriana) and Juan C. Martinez Arias (Pontificia Universidad Javeriana)

Advanced Undergraduate Computing Students' Perception of Software Quality Teaching: a Survey in the Brazilian Paraná State

Guilherme N. Ferrari (State University of Maringá), Thais S. Nepomuceno (State University of Maringá), Claudia Heidemann Santana (State University of Maringá), Carlos D. Luz (State University of Maringá), Gislaíne C. Leal (State University of Maringá), Aline M. M. Amaral (State University of Maringá), Renato Balancieri (State University of Paraná) and Edson Oliveirajr (State University of Paraná)

Using Team Topologies in Model-Driven Strategic Alignment

Rene Noel (Universidad de Valparaíso, Universitat Politècnica de València), Jose Ignacio Panach Navarrete (Universitat de València) and Oscar Pastor (Universitat Politècnica de València)

Estudios de casos realizados en PyMES de Argentina para validar DepProMod

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Impact of Remote Work on Portuguese Software Professionals During the COVID-19 Pandemic

Ana Almeida (ALGORITMI Research Centre, LASI, Universidade do Minho), Jacome Cunha (Universidade do Porto & HASLab/INESC TEC) and João M. Fernandes (ALGORITMI Research Centre, LASI, Universidade do Minho)

Um checklist para inspeção de privacidade e proteção de dados pessoais em artefatos de software

Diego André Cerqueira (Universidade Federal do Rio de Janeiro), Rafael Maiani de Mello (Universidade Federal do Rio de Janeiro) and Guilherme Horta Travassos (Universidade Federal do Rio de Janeiro)

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*Larissa Amaral (Universidade de São Paulo), Anarosa Alves Franco Brandão (Universidade de São Paulo)
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Gonzalo Zabala (Universidad Abierta Interamericana)

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Anrafel Fernandes Pereira (Pontifícia Universidade Católica do Rio de Janeiro, Universidade de Vassouras)

Uma Abordagem de Teste de Integração com Planejamento em Inteligência Artificial

Luis F. de Lima (Universidade Federal do Paraná)

Capacidad de Negocio y Marco de trabajo para mejorar proyectos basados en BizDevOps

Guillermo Fuentes (Universidad de Castilla-La Mancha)

Uma Abordagem para Alinhamento de Requisitos de Segurança e Proteção de Sistemas IoT Críticos

Ernesto Veiga (Universidade Federal de Goiás)