



# CIBSE2025

XXVIII Congreso Iberoamericano en Ingeniería de Software  
XXVIII Congresso Ibero-Americano de Engenharia de Software  
XXVIII Ibero-American Conference on Software Engineering  
Ciudad Real, Spain, May 12 - 16, 2025

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# Preface

On behalf of the CibSE 2025 Organizing Committee, we are pleased to present the proceedings of the 28th Ibero-American Conference on Software Engineering (CibSE 2025). Since its inception in 1998, CibSE has served as a premier forum for showcasing recent advancements in both research and best practices for engineering software-intensive systems. This year, the conference was hosted by the University of Castilla-La Mancha in Spain, marking its first edition in Europe, and providing an ideal setting for this prestigious and high-quality event.

Software Engineering research and practice play a critical role in the reliable and efficient development of increasingly complex software systems. Grounded in well-established methods, processes, and tool support, Software Engineering enables the creation of robust, maintainable, and scalable solutions. Over the past decades, software has become deeply embedded in every aspect of society—ranging from enterprise systems that support core organizational processes, to real-time embedded systems and personal mobile applications. Today, this expansion continues alongside the emergence of transformative technologies such as quantum computing, green computing, the Internet of Things (IoT), and, most notably, the integration of Artificial Intelligence (AI) and Generative AI. These advancements underscore the growing importance of Software Engineering as a discipline capable of addressing the challenges posed by innovation, scale, and societal impact.

CibSE has established itself as the leading forum for Software Engineering research in Ibero-America, promoting high-quality scientific inquiry while fostering collaboration between academia, industry, and other organizations. The conference plays a key role in supporting its research community by providing opportunities to publish, present, and discuss their work among academic peers, while also engaging students and practitioners participation.

For this edition of CibSE, a total of 70 submissions were received (57 full papers and 13 emerging ideas papers). After six desk rejections, 64 submissions (52 full papers and 12 emerging ideas) underwent the full review process. After careful peer-reviewing by the members of the Program Committee, 12 full papers and 2 emerging ideas papers were accepted (16 were initially accepted, but four were later withdrawn by the authors), resulting in an acceptance rate of 23% for full papers and 16% for emerging ideas papers. Five distinguished papers were invited to submit extended versions to the *Science of Computer Programming* journal, and the best paper received an award certificate. In addition to the 17 research papers, 11 posters were accepted, providing a forum to share and discuss early-stage research and enriching the CibSE technical program. Also, seven papers were accepted in the Applied R&D projects and contracts category, presenting

ongoing research, collaboration experiences, and technology transfer with industry and organizations. Finally, seven papers were accepted in the Journal First category, providing authors the opportunity to discuss their previously published work with the CibSE community and further broaden the scope of the technical program.

CibSE 2025 hosted a new edition of the Doctoral Symposium, aimed at disseminating ongoing research conducted by early-career researchers. In this forum, a panel of experts engaged in discussions with twenty doctoral students, offering valuable feedback, new perspectives, and suggestions to enhance their doctoral work. The research presented by the students covered several topics aligned with CibSE 2025's scope, including foundations, techniques, tools, and applications. The symposium was further enriched by a keynote presentation delivered by Prof. Óscar Díaz (University of the Basque Country, Spain), titled *"PhD walker, there is no research question; the question arises from literature searches"*.

This year's edition also hosted the 8th edition of the Ibero-American School on Software Engineering (ElbAIS), which aims to provide a forum for discussing both foundational and emerging technology topics in Software Engineering. ElbAIS welcomes participation from practitioners, undergraduate and graduate students, and researchers alike. For CibSE 2025, three tutorials were offered, addressing timely and relevant topics in Software Engineering:

- *Agility on Steroids of Artificial Intelligence* (Javier Garzás, Universidad Rey Juan Carlos, Spain).
- *Fundamentals of Software Sustainability* (Félix García, María de los Ángeles Moraga, University of Castilla-La Mancha, Spain).
- *Software Engineering for ML Systems* (Silverio Martínez-Fernández, Santiago del Rey, Universitat Politècnica de Catalunya, Spain).

Another highlight of CibSE 2025 was the Industry Talks Track, presented in the form of a roundtable discussion titled *"The University-Industry Relationship: A Debate That Remains Necessary."* This session brought together professionals from both private companies and the Spanish public administration to address key topics, including: benefits and challenges of university-industry collaboration, potential alternatives or solutions for bridging gaps, the role of the artificial intelligence revolution in research and knowledge transfer between academia and industry, positive and negative aspects of using artificial intelligence in research, and successful case studies that may serve as inspiration for future collaborations.

The conference also featured three distinguished keynote presentations, each addressing prominent and timely topics in Software Engineering:

- *Are we Getting Reliable Evidence? Methodology is Critical in Empirical Studies.* Natalia Juristo (Technical University of Madrid, Spain). The keynote addresses the importance of following proper and rigorous methodology when running an empirical study, as a critical element for advancing the generation of evidence in software engineering built on reliable findings. The talk discusses the methodological status of two types of empirical studies: experiments and observational studies, empirical activities such as data analysis and aggregation, and several empirical “domains” (as laboratory, MSR, or Deep neural networks).
- *AI and the Future of Software Development: Learning from Industry, Research, and Human-Centered Theories.* Margaret-Anne Storey (University of Victoria, Canada). The keynote addresses the impact of Artificial Intelligence (AI) innovations on the developer experience, how they write code, comprehend complex systems, create innovative solutions, collaborate with peers, and in communities of practice. The talk explores what can be learned from AI’s adoption in industry and early research, taking insights from cognitive science, human-computer interaction, and social learning theories to understand AI’s broader implications.
- *The Cloud-IoT Continuum: Software Engineering for a Connected Ecosystem.* Ernesto Pimentel (University of Málaga, Spain). The keynote presents the challenges of systems development for the Cloud-IoT continuum ecosystem, where cloud computing services and Internet of Things (IoT) devices are seamlessly and continuously integrated. The talk addresses key elements such as interoperability between heterogeneous devices, components at different levels, security and privacy and energy efficiency, highlighting architectures to support this type of system, emerging trends and opportunities offered by the Cloud-IoT continuum.

Finally, we would like to express our sincere gratitude to all those who contributed to making this event possible. The high quality of the technical program is the result of the commitment and hard work of the Program Committee members and additional reviewers. We are also deeply thankful to the Organizing Committee, authors, keynote speakers, panelists, tutorial instructors, session chairs, sponsors, and all participants for their valuable contributions to the success of ClbSE 2025. A special word of appreciation goes to Breno de França and Beatriz Bernárdez, who, as Open Science and Proceedings Chairs, played a key role in the preparation and publication of these proceedings.

We are also grateful to the ClbSE Steering Committee for their continued support, with special thanks to Guilherme Horta Travassos and Beatriz Marín for their guidance throughout the process. Last but not least, we extend our deepest gratitude to Marcela Genero and José Antonio Cruz-Lemus, our exceptional General Chairs. Their leadership, tireless dedication, and outstanding coordination were instrumental in bringing all aspects

of the conference together and ensuring that everything ran smoothly. CIBSE 2025 would not have been possible without their vision and unwavering commitment.

It has been a privilege and a pleasure to serve as Program Chairs for CIBSE 2025, and we are deeply thankful for the opportunity.

Silvia Abrahão and Andrea Delgado  
CIBSE 2025 Program Chairs

# Main Conference

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Renata Guizzardi (University of Twente, Netherlands)

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Luis Iribarne (University of Almería, Spain)

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Bell Manrique Losada (Universidad de Medellín, Colombia)

Johnny Marques (Instituto Tecnológico de Aeronáutica (ITA), Brazil)

Silverio Martínez-Fernández (Universitat Politècnica de Catalunya, Spain)

Beatriz Marín (Universitat Politècnica de València, Spain)

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Elisa Yumi Nakagawa (University of São Paulo, Brazil)

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Elvys Soares (Federal Institute of Alagoas, Brazil)  
Martin Solari (Universidad ORT Uruguay, Uruguay)  
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Vitor E. Silva Souza (Federal University of Espírito Santo, Brazil)  
Leopoldo Teixeira (Federal University of Pernambuco, Brazil)  
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# Doctoral Symposium

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Aurora Vizcaíno (Universidad de Castilla - La Mancha, Spain)

Jose Luis de la Vara (Universidad de Castilla - La Mancha, Spain)

## **Panel Experts**

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Beatriz Bernárdez (University of Seville, Spain)

Isabel Sofia Brito (Instituto Politécnico de Beja, Portugal)

Luca Cernuzzi ( UC Nuestra Señora de la Asunción, Paraguay)

Óscar Díaz (University of the Basque Country, Spain)

Félix García (University of Castilla-La Mancha, Spain)

Marisa Panizzi (Universidad Nacional de Hurlingham, Argentina)

Ricardo Pérez-Castillo (University of Castilla-La Mancha, Spain)

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