



# Proceedings of the 26th Workshop on Requirements Engineering (WER23)

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## Welcome Message

On the 15th, 16th, and 17th of August 2023, we convened for the twenty-sixth edition of the Requirements Engineering Workshop at PUC-RS in Porto Alegre, Rio Grande do Sul, Brazil. The event brought together participants from both academia and industry who actively engaged in fruitful discussions over these 3 days, encompassing topics such as Usability, Transparency, Data Protection, Smart Cities, Safety Requirements, Modeling, and Knowledge Management Requirements. We have received 26 submissions; after the reviewing process, 11 papers were accepted as full papers and 6 as short papers. Each submitted paper was reviewed by at least three program committee members.

On the first day, the event commenced with a poignant tribute to the late Professor Luiz Márcio Cysneiros, who played a pivotal role in areas such as non-functional requirement modeling, Requirements for the HealthCare domain, business modeling, and ethics. Following that, we were captivated by the engaging presentation of the international keynote speaker, Professor Ricardo Gaucitua. He delved into the impacts of artificial intelligence on requirements engineering, offering the audience numerous insights into software development in the post-"chatgpt" era. In the afternoon, in addition to the technical session featuring articles centered on Requirements Elicitation and Modeling, there was also a session in the Master's and Doctoral track dedicated to presenting and discussing ongoing research in the field of Requirements Engineering. The topics covered included writing standards for requirements, design thinking, and the development and evaluation of catalogs of non-functional requirements.

The second day commences with the charismatic keynote presentation by the national speaker, Professor Juliana Saraiva, discussing the impact of the general data protection law and the "marco legal" of artificial intelligence in the context of requirements engineering. In this presentation, she highlighted that there are numerous open issues in this field and emphasized the necessity of refining the modeling of non-functional requirements to better address the challenges posed in this context. Subsequently, we had two technical sessions in the main track, Session 2, featuring articles on usability and accessibility requirements in the morning, and in the afternoon, Session 3 focused on works related to Transparency / Compliance in Requirements Engineering. Towards the end of the second day, a panel discussion took place on the subject of industry and academia, exploring the theme of Gaps between Academia and Industry in the Era of Digitization and Advanced AI.

The panel was moderated by Professor Carla Silva and featured the presence of four panelists: Ricardo Gacitúa, Juliana Saraiva, Eduardo Peres, and Karina Kohl. The initial two panelists represented academia, while the subsequent two represented the industry. It was a moment marked by highly fruitful discussions with significant engagement from the audience. A notable highlight was the recognition that both academia and industry encounter obstacles in fostering collaborative efforts, and often governmental intervention is required to orchestrate a more effective synergy between the two sectors. The panel concluded with the following question:

What initiatives can we bring forth in the coming year to enhance the synergy between academia and industry?

For the first time in the event, we introduced a dedicated industry track, and on the final day of the event, we initiated the keynote presentation by Luciane Forte from Globo. She spoke about the Requirements of the Big Brother Brazil (BBB) voting platform. During her presentation, she shared insights into the key challenges facing this product as the manager of entertainment software at a nationally recognized company, overseeing a geographically distributed team across different Brazilian states. Following that, we had a single technical session featuring a selection of works showcasing experiences in requirements engineering within the industry. Continuing with the industry track, two tutorials were conducted. In the early afternoon, Mateus Piveta from SURYA Consulting presented the tutorial "Business Agility: The Evolution of Agile Thinking from the Perspective of Requirements Engineering," followed by Camila Bemúdez and Henrique Monteiro, both from Thoughtworks (Brazil), who presented the tutorial "Design Thinking: Adaptability in Different Types and Phases of the Project." Simultaneously with the tutorials, two more technical sessions were held within the research track. Early in the afternoon, the technical track focused on themes of privacy and data protection requirements, followed by a technical session encompassing topics such as Smart Cities, Safety Requirements, and Knowledge Management Requirements.

We would like to thank the international program committee, belonging to several different countries, for contributing to improve paper quality. We would like also to thank the authors for submitting valuable contributions; the WER Steering Committee, Graciela Hadad, Jaelson Castro and Julio Leite, the tracks chairs, the session chairs, the keynotes, the panelists, the proceedings chairs, the publicity chairs, the tutorial instructors; the General Chairs Sabrina Marczak and Rafael Parizi, and the local organization members for making possible to carry out the workshop; and the participants for their interest in the Requirements Engineering themes that this workshop encourages to disseminate.

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Luciana Zaina, UFSCar

## Keynotes

*Title: Impact of Artificial Intelligence on Requirements Engineering: Current Status and Research Challenges*  
Keynote Speaker: Ricardo Gacitúa - Universidad de La Frontera (Chile)

*Title: Requisitos 2.0: Desvendando o Impacto da LGPD e do Marco Legal da IA na Engenharia de Requisitos*  
Keynote Speaker: Juliana Saraiva - Universidade Federal da Paraíba (Brazil)

## Industry Invited Talks

*Title: Desvendando Requisitos: Estudo de Caso da Plataforma de Votação do BBB*  
Speaker: Luciane Fortes - Globo

## Panel Session

*Title: Painel Indústria x Academia - Lacunas entre Academia e Indústria na Era da Digitalização e da IA Avançada*  
Panelists: Karina Kohl (Uber, Brazil), Juliana Saraiva (UFPB, Brazil), Eduardo Peres (DB, Brazil), Ricardo Gacitúa (Universidad de La Frontera, Chile), Moderator: Julio Leite (UFBA, Brazil)

## Tutorial

*Title: Business Agility: A Evolução do Pensamento Ágil sob o viés da Engenharia de Requisitos*  
Mateus Piveta (SURYA Consulting - Cofundador da ABO Academy)

*Title: Design Thinking: Adaptabilidade em Diferentes Tipos e Momentos do Projeto*  
Camila Bermúdez (Thoughtworks, Brazil), Henrique Monteiro (Thoughtworks, Brazil)

## Number of Accepted Papers

### Regular Track

Papers submitted: 26

Papers accepted as full papers: 11 (42%)

Papers accepted as short papers: 6

## Accepted Papers

### Regular Research Track

1. Improving the Requirement Elicitation Process using Empathy Maps and Personas: A Quasi-Experiment - Ezequiel Kahan, Emilio Insfrán Pelozo, Marcela Genero, Alejandro Oliveros
2. Process of transforming requirements elicited with MindMaps into iStar models - Gustavo Cesar Lopes Geraldino, Victor Francisco Araya Santander
3. (Short Paper) An approach to extract a conceptual model from natural language specifications using NLP and IA - Leandro Antonelli, Juliana Delle Ville, Matias Adorno, Letizia Ballestero, Santiago Ceconato, Alejandro Fernandez, Gregorio Maclen, Giuliana Maltempo, Juliana Mattei, Luciana Tanevitch, Diego Torres
4. (Short Paper) Aplicação de Mineração na Elicitação de Citações em Scholar: o caso do WERpapers. - Roxana Portugal, Lyrene Silva, Julio Cesar Leite, Dennis Farfán Lovón, Daniel Mosqueira Obando
5. (Short Paper) Revisitando Processos de Construção de Requisitos: Uma Perspectiva de Transparência - Julio Cesar Leite
6. (Short Paper) O Uso de Inspeção para Aumentar a Transparência de Processos - Juliana Conceição, Julio Leite, Rita Pitangueira
7. (Short Paper) Conformidade com a LGPD por meio de requisitos de negócio e requisitos de solução - Diego Menegazzi, Carla Silva
8. (Short Paper) Ambiguity resolution and legal compliance of requirements: an exploratory study in the literature - Dorgival Netto, Carla Silva
9. Evolving the USARP method to support usability requirements elicitation and specification - Anna Beatriz Marques, Maria Victoria Fiori, Bruna Ferreira
10. Using Self-assessment for Improving Maturity on Accessibility Requirements in Software Practice at ORG: A Case Study - Renata Vinadé, Sabrina Marczak, Daniela Cruzes, Monica Iovan, Julie Rasmussen, Victoria Bondarchuk
11. Visual-PR: Uma abordagem visual e gamificada para o apoio à Priorização de Requisitos - Luiza Lira, Maria Lencastre, Joao Henrique Pimentel, Jaelson Brelaz Castro, Mônica Bandeira
12. Um Modelo de Conceitos Relacionados à Privacidade de Dados Pessoais - Arthur Vieira, Mariana Peixoto, Carla Silva
13. Análise de conformidade da LGPD nas Instituições Públicas de Ensino Superior no Brasil sob a perspectiva dos profissionais de TIC - Keyla Silva, Laura Sarkis
14. Uma abordagem baseada no Catálogo de Requisitos Não Funcionais para conformidade à LGPD - Henrique Prado de Sá Sousa, Eduardo Kinder Almentero, Tadeu Moreira de Classe, Rodrigo Juliao dos Santos, Julio Cesar Leite

15. ReQSI-CI: Um Catálogo de Requisitos Não-Funcionais para Sistemas de Informação em Cidades Inteligentes sob a Perspectiva de Ecossistemas Digitais - Alexandre Barbosa, Paulo Malcher, Rodrigo Santos
16. Requirements4Safety – Construindo uma técnica para modelagem de Requisitos Iniciais de Segurança - Moniky Ribeiro, Jaelson Castro, Ricardo Ramos, Maria Lencastre, Abimael Santos
17. Avaliação de Conhecimento em Engenharia de Requisitos no Startup Gov.br - Ricardo Cordeiro Galvão Sant'Ana van Erven, Pollyanna C. O. Dias, Demétrius de Almeida Jubé, George Marsicano Corrêa, Edna Dias Canedo

## Master's and Doctoral Track (WER-MDT)

1. Uma proposta de padrões de sintaxe de requisitos no idioma português - Rebeca Camurça Cunha, Christopher Shneider Cerqueira.
2. Uso do Design Thinking na Elicitação de Requisitos em Ambientes de Trabalho Remoto e Distribuído - Márcia Hortência Fonseca Ribeiro Nardes Maciel Márcia, Alexandre Lazaretti Zanatta Zanatta.
3. Elaboração e avaliação de um Catálogo de Requisitos Não-Funcionais Críticos em um Contexto de Domínio de Aplicação de Diplomas Digitais - Vitor Gilnek, Victor Santander.

## Industry Track

1. Verificação textual de requisitos legais no processo de aquisição de TIC: um estudo na administração pública federal - Raimundo Fagner Costa, Carla Silva, Rafael Mello.
2. Graphical DSL Devoted to Ease the Application of Model-Driven Engineering in Petrochemical Industry Automation - Fábio Basso, Jaqueline de Souza Moura, Carlos Eduardo Xavier Correia, Karina Casola, Leandro Buss Becker
3. A Requirements Specification Method: An Experience Report in Aerospace - Carlos Renato dos Santos, Johnny Cardoso Marques
4. Identifying Knowledge Gaps in Requirements Engineering: An Empirical Study with Professionals in the Brazilian Software Industry - João Epifânio, Erica Esteves, Marcia Lucena, Gabriela Trindade
5. Um Modelo Híbrido de Gestão de Requisitos para Desenvolvimento e Aquisição de Softwares na Indústria Farmacêutica - Davi De França Carneiro, Nelson Gutemberg Rocha Da Silva, Iago Interaminense Gomes, Mauricio Barros Ottoni

## Availability of Proceedings

The proceedings of WER23 as a book are planned to be published in an open-access repository such as SciELO - Scientific Electronic Library Online, for which an ISBN number was registered. ISBN 978-65-00-77516-7. Additionally, as in all editions of WER, the papers are also be published on the open-access repository <http://wer.inf.puc-rio.br/WERpapers/index.lp>, which carries the ISSN No. 2675-0066. Furthermore, the papers will be reported to the indexing of computer science publications at DBLP.



## Future Conferences or Editions

The WER 2024 will be organized by Graciela Hadad, Paula Angeleri, and Leandro Antonelli at the University of Belgrano, Buenos Aires, Argentina.

## Contact Information

Leandro Antonelli

Lifia, Facultad de Informática, Universidad Nacional de La Plata, Argentina

[leandro.antonelli@lifia.info.unlp.edu.ar](mailto:leandro.antonelli@lifia.info.unlp.edu.ar)

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