



Wesley K. G. Assunção

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EMPLOYMENT

- **North Carolina State University (NC State)** *Aug 2023 - ...*
Associate Professor Raleigh, NC, USA
- **Johannes Kepler University Linz (JKU)** *Aug 2021 - Jul 2023*
University Assistant/Senior Researcher Linz, Austria
- **Pontifical Catholic University of Rio de Janeiro (PUC-Rio)** *Jun 2019 - Jul 2023*
Postdoctoral Researcher Rio de Janeiro, Brazil
- **Federal University of Technology - Paraná (UTFPR)** *Jan 2013 - Feb 2021*
Assistant/Associate Professor Toledo, Brazil
- **Faculdade Sul Brasil (Fasul)** *2006 - 2010*
Full-stack Web Developer Toledo, Brazil

EDUCATION

- **Ph.D. in Computer Science** *Sep 2012 - Apr 2017*
Federal University of Paraná (UFPR) Curitiba, Brazil
- **M.Sc. in Informatics** *Mar 2010 - Apr 2012*
Federal University of Paraná (UFPR) Curitiba, Brazil
- **B.Sc. in Information Systems** *Feb 2003 - Dec 2006*
Faculdade Sul Brasil (Fasul) Toledo, Brazil

GRANTS/FUNDING (SELECTED)

- **Co-Existence of Modeling Language Versions and their Bounded Co-Evolution** *2025 - 2028*
Austrian Science Fund (FWF)
 - Role: Co-PI
 - 449,882.55 EUR = \approx 492,000.00 USD
- **RefactorAI** *2025 - 2028*
Economic Affairs Department of the State of Upper Austria
 - Role: International Collaborators
 - 928,250.00 EUR = \approx 1,014,000.00 USD
- **Body of Knowledge on Software Modernization for Digital Transformation** *2025-2026*
State of Upper Austria, JKU LIT program, 12 LIT-Call (Seed Projects)
 - Role: PI
 - 198,656.82 EUR = \approx 217,010.00 USD
- **‘Microservicification’ of Legacy Systems** *2020 - 2023*
Carlos Chagas Filho Foundation for Supporting Research in the State of Rio de Janeiro (FAPERJ)
 - Role: Principal Investigator / Call: PDR10-FAPERJ-2020
 - 360,000.00 BRL = \approx 75,000.00 USD
- **Extraction of SPLs from Legacy Systems in Small and Medium-Sized Enterprises** *2019 - 2020*
Parana Research Foundation (Araucária)
 - Role: Principal Investigator / Call: Young Researchers - PPP (FA/CNPq) - CP 20/18
 - 50,000.00 BRL = \approx 10,000.00 USD

AWARDS (SELECTED)

- **Distinguished Reviewer Award** *ICSE 2026*
48th IEEE/ACM International Conference on Software Engineering: SEET track
- **Distinguished Reviewer Award** *FSE 2025*
33rd ACM International Conference on the Foundations of Software Engineering: Research track
- **Distinguished Reviewer Award** *SANER 2025*
32nd IEEE Intl. Conference on Software Analysis, Evolution and Reengineering: Research track
- **ACM SIGSOFT Distinguished Paper Award** *FSE 2024*
32nd International Conference on the Foundations of Software Engineering
 - Title: Understanding Developers' Discussions and Perceptions on Non-Functional Requirements: The Case of the Spring Ecosystem.
- **IEEE Computer Society TCSE Distinguished Paper Award** *SANER 2024*
31st IEEE International Conference on Software Analysis, Evolution and Reengineering
 - Title: Exploring Dependencies Among Inconsistencies to Enhance the Consistency Maintenance of Models.
- **ACM SIGSOFT Distinguished Paper Award** *MSR 2023*
20th International Conference on Mining Software Repositories
 - Title: The ABLoTS Approach for Bug Localization: is it replicable and generalizable?
- **Best Paper Award** *SPLC 2023*
27th ACM International Systems and Software Product Line Conference
 - Title: Feature-oriented Test Case Selection during Evolution of High-Configurable Systems
- **Best Paper Award - Practice & Innovation Track** *MODELS 2022*
25th International Conference on Model Driven Engineering Languages and Systems
 - Title: Reactive Links Across Multi-Domain Engineering Models

INVITED TALKS (SELECTED)

- **Keynote Speaker: 15th International Workshop on Genetic Improvement** *2026*
Title: Genetic Improvement for Software Modernization, Synergy and Opportunities
- **Keynote Speaker: 29th ACM International Systems and Software Product Line Conference 2025**
Title: The Future of Software Engineering is in your hands, and I believe in you!
- **Keynote Speaker: Triangle Tech Talks at the Deutsche Bank Cary** *2025*
Title: Has the LLM Correctly Translated My Code? Verifying Code Translations with Behavioral Analysis.
- **Keynote Speaker: 1st Workshop on Soft. Eng. Challenges in Financial Firms** *2024*
Title: Software Modernization: from industry needs to developers' perception

RESEARCH INTERESTS

- **Software Modernization:** reverse engineering, re-engineering, and migration.
- **Variability Management:** variability mechanisms, software customization and reuse.
- **Software Quality:** technical debt, code smells, and software refactoring.
- **Model-Driven Engineering:** inconsistency detection, repair generation and propagation.
- **Collaboration in SE:** change synchronization, tool flexibility, and conflict awareness.
- **Software Testing:** regression testing, integration testing, and test case prioritization.
- **Search-Based Software Engineering:** AI/ML for software engineering.

PUBLICATIONS (SELECTED)

- **ACM TOSEM 2026**: Rodrigo Laigner; Ana Almeida; Wesley K. G. Assunção; and Yongluan Zhou. *An Empirical Study on Challenges of Event Management in Microservice Architectures*. In: Transactions on Software Engineering and Methodology. 2026. ACM. 10.1145/3776581
- **EMSE 2026**: Marcel Homolka; Luciano Marchezan; Wesley K. G. Assunção; and Alexander Egyed. *What Really Happened to my Models?" Extending Co-Evolution with Cross-Layer Traceability in Metamodel-Model Histories*. In: Empirical Software Engineering. 2026. Springer. 10.1007/s10664-025-10773-4
- **ACM TOSEM 2025**: Wesley K. G. Assunção; Luciano Marchezan; Lawrence Arkoh; Alexander Egyed; and Rudolf Ramler. *Contemporary Software Modernization: Strategies, Driving Forces, and Research Opportunities*. In: Transactions on Software Engineering and Methodology. 2025. ACM. 10.1145/3708527
- **IEEE TSE 2024**: Luiz Carvalho; Thelma Elita Colanzi; Wesley K. G. Assunção; Alessandro Garcia; Juliana Alves Pereira; Marcos Kalinowski; Rafael Maiani de Mello; Maria Julia de Lima; and Carlos Lucena. *On the Usefulness of Automatically Generated Microservice Architectures*. In: Transactions on Software Engineering. 2024. IEEE. 10.1109/TSE.2024.3361209
- **ICSE 2024**: Hui Gao; Hongyu Kuang; Wesley K. G. Assunção; Christoph Mayr-Dorn; Guoping Rong; He Zhang; Xiaoxing Ma; and Alexander Egyed. *TRIAD: Automated Traceability Recovery based on Biterm-enhanced Deduction of Transitive Links among Artifacts*. In: 46th International Conference on Software Engineering (ICSE). 2024. IEEE/ACM. 10.1145/3597503.3639164
- **SANER 2024**: Luciano Marchezan; Wesley K. G. Assunção; Edvin Herac; Saad Shafiq; and Alexander Egyed. *Exploring Dependencies Among Inconsistencies to Enhance the Consistency Maintenance of Models*. In: 31st IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER). 2024. IEEE. 10.1109/SANER60148.2024.00023
- **ICSE 2023**: Daniel Oliveira; Wesley K. G. Assunção; Alessandro Garcia; Ana Carla Bibiano; Márcio Ribeiro; Rohit Gheyi; and Balduino Fonseca. *The untold story of code refactoring customizations in practice*. In: 45th International Conference on Software Engineering (ICSE). 2023. IEEE/ACM. 10.1109/ICSE48619.2023.00021
- **EMSE 2022**: Daniel Oliveira; Wesley K. G. Assunção; Alessandro Garcia; Balduino Fonseca; and Márcio Ribeiro. *Developers' Perception Matters: Machine Learning to Detect Developer-sensitive Smells*. In: Empirical Software Engineering. 2022. Springer. 10.1007/s10664-022-10234-2
- **ICSME 2021**: Ana Carla Bibiano; Wesley K. G. Assunção; Daniel Coutinho; Kleber Santos; Vinícius Soares; Rohit Gheyi; Alessandro Garcia; Balduino Fonseca; Márcio Ribeiro; Daniel Oliveira; Caio Barbosa; João Lucas Marques; and Anderson Oliveira. *Look Ahead! Revealing Complete Composite Refactorings and their Smelliness Effects*. In: 37th International Conference on Software Maintenance and Evolution (ICSME). 2021. IEEE. 10.1109/ICSME52107.2021.00033
- **EASE 2021**: Daniele Wolfart; Wesley K. G. Assunção; Ivonei F. da Silva; Diogo C. P. Domingos; Ederson Schmeing; Guilherme Villaca; and Diogo do N. Paza. *Modernizing Legacy Systems with Microservices: A Roadmap*. In: 25th Evaluation and Assessment in Software Engineering (EASE). 2021. ACM. 10.1145/3463274.3463334
- **Full List of Publications**: <https://wesleyklewerton.github.io/publications.html>

- **DBLP:** <https://dblp.org/pid/90/9459.html>
- **Google Citation:** <http://scholar.google.com/citations?user=PBndQZcAAAAJ>

STUDENT SUPERVISIONS

- **Ph.D. supervisions:** 5 in progress
- **Ph.D. co-supervisions:** 2 in progress / 6 concluded
- **M.Sc. supervisions:** 2 in progress / 4 concluded

SERVICE TO THE COMMUNITY (SELECTED)

- **Service:** Co-editor of the In Practice track at the Journal of Systems and Software, 48th IEEE/ACM International Conference on Software Engineering (ICSE 2026) - Student Research Competition Co-Chair, 23rd International Conference on Mining Software Repositories (MSR 2026) - Tutorials Co-Chair, 34th IEEE/ACM International Conference on Program Comprehension (ICPC 2026) - Tool Demonstration Co-Chair, 29th International Conference on Evaluation and Assessment in Software Engineering (EASE 2025) - Short papers & Emerging results Co-Chair, 32nd IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2025) - Tutorial Co-Chair, 18th IEEE International Conference on Software Testing, Verification and Validation (ICST 2025) - Poster Co-Chair, Software Product Line Conference Most Influential Paper (MIP) award - Committee Member (since 2024), 32nd International Conference on the Foundations of Software Engineering (FSE 2024) - New Faculty Symposium Co-Chair, Journal of Systems and Software (JSS) Special Issue on Managing Variability in Complex Software-Intensive Systems - Guest editor (SPLC 2022 SI), 26th International Systems and Software Product Line Conference (SPLC 2022) - Program Co-Chair, 6th Brazilian Symposium on Systematic and Automated Software Testing (SAST 2021) - Program Co-Chair.
- **Journal Reviewer:** IEEE Transactions on Software Engineering, ACM Transactions on Software Engineering and Methodology, Empirical Software Engineering, Journal of Systems and Software, Information and Software Technology, Automated Software Engineering, IEEE Software, Software Testing, Verification & Reliability, Software and Systems Modeling, Software: Practice and Experience, Science of Computer Programming, IET Software.
- **Conference Program Committee:** ICSE 2026, SANER 2026, MSR 2026, ICPC 2026, TechDebt 2026, ICSE 2025, FSE 2025, SANER 2025, MSR 2025, CAIN 2025, ESEM 2025, ICSME 2025, ICST 2025, ICSE 2024, ASE 2024, SANER 2024, MSR 2024, CAIN 2024, SCAM 2024, FSE 2024, MSR 2023, ICSME 2023, SSBSE 2023, MSR 2022, ICSME 2022, ASE 2022, ISSTA 2022.