

Heleno de Souza Campos Junior

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Google Scholar · GitHub · Lattes CV

Research Interests

- **AI for software engineering:** how artificial intelligence can support software engineering tasks and how to improve that support, including how agents based on large language models (LLMs) make decisions and how they compare with one another and with other automated approaches.
- **Software configuration management:** evaluation and improvement of support for version control and merge conflict resolution.
- **Software testing:** evaluation of existing approaches and proposal of new ones.

Appointments

2026–present	Assistant Professor , PESC/COPPE, Federal University of Rio de Janeiro (UFRJ)
2025–present	Postdoctoral Researcher , Institute of Computing, Fluminense Federal University (UFF), CNPq PDJ Fellowship
2024–2026	Substitute Professor , Institute of Computing, Fluminense Federal University (UFF)

Education

2019–2025	D.Sc. in Computing , Fluminense Federal University (UFF), Brazil Thesis: <i>Search-Based Merge Conflict Resolution</i> . Advisor: Leonardo Gresta Paulino Murta.
2016–2018	M.Sc. in Computer Science , Federal University of Juiz de Fora (UFJF), Brazil Advisor: Marco Antônio Pereira Araújo.
2011–2015	B.Sc. in Information Systems , IF Sudeste MG, Brazil Sandwich year at the University of Pisa, Italy (2013–2014), CAPES Science without Borders.

Selected Awards and Fellowships

2026	Distinguished Paper Award, SBES 2026 Research Track; Available and Functional artifact badges, CBSOFT 2026
2026	Top 3 Ph.D. Theses, Software Engineering Thesis Contest (CTD-ES), SBES 2026
2025, 2026	Distinguished Reviewer, SBES 2025 Research Track and SBES 2026 Insightful Ideas and Emerging Results Track
2022	Distinguished Paper Award, SBES 2022
2019	Best Paper Award, SAST 2019
2021–2023	FAPERJ “Doutorado Nota 10” Ph.D. Fellowship

Selected Publications

- [1] **H. S. Campos Junior**, G. G. L. Menezes, M. O. Barros, A. van der Hoek, L. G. P. Murta. Towards a Feasible Evaluation Function for Search-Based Merge Conflict Resolution. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, v. 35, pp. 1–35, 2026. Presented at ICSE 2026 (Journal-First track).
- [2] **H. S. Campos Junior**, L. G. P. Murta. How AI Coding Agents Resolve Merge Conflicts: An Empirical Study. In: *Brazilian Symposium on Software Engineering (SBES 2026)*, São Paulo, 2026. *Distinguished Paper Award*.
- [3] **H. S. Campos Junior**, G. G. L. Menezes, M. O. Barros, A. van der Hoek, L. G. P. Murta. How Code Composition Strategies Affect Merge Conflict Resolution? *Journal of Software Engineering Research and Development (JSERD)*, v. 12, pp. 13:1–13:17, 2024.
- [4] P. Elias, **H. S. Campos Junior**, E. Ogasawara, L. G. P. Murta. Towards Accurate Recommendations of Merge Conflicts Resolution Strategies. *Information and Software Technology (IST)*, v. 164, 107332, 2023.
- [5] **H. S. Campos Junior**, G. G. L. Menezes, M. O. Barros, A. van der Hoek, L. G. P. Murta. Towards Merge Conflict Resolution by Combining Existing Lines of Code. In: *Brazilian Symposium on Software Engineering (SBES 2022)*. ACM, 2022, pp. 425–434. *Distinguished Paper Award*.
- [6] E. S. Prutchi, **H. S. Campos Junior**, L. G. P. Murta. How the Adoption of Feature Toggles Correlates with

Branch Merges and Defects in Open-Source Projects? *Software: Practice and Experience*, v. 52, pp. 506–536, 2021.

[7] R. M. da Silva, C. Cruz, **H. S. Campos Junior**, L. G. P. Murta, V. O. Neves. What Is the Adoption Level of Automated Support for Testing in Open-Source Ecosystems? In: *Brazilian Symposium on Systematic and Automated Software Testing (SAST 2019)*. ACM, 2019. *Best Paper Award*.

[8] **H. S. Campos Junior**, L. G. P. Murta. LLM-based vs. Search-based Merge Conflict Resolution: An Empirical Study of Competing Paradigms. Under review at *Empirical Software Engineering*. Preprint: arXiv:2605.16646.

In total: 9 journal articles, 12 conference and workshop papers, 4 short papers, and 2 registered software tools. Complete list on Google Scholar.

Student Supervision

Ongoing	M.Sc.: Isabelle Mamprim and Gustavo Oliveira Pessanha da Silva (advisor, PESC/UFRJ); Carlos Henrique Ferreira Brito Filho (co-advisor with Guilherme Horta Travassos, PESC/UFRJ); Ygor Wesley Soares Moreira Lima (co-advisor, PGC/UFF). Two undergraduate theses as co-advisor (UFF, UFJF).
2020–2026	Eight undergraduate theses completed as co-advisor (UFF, UFJF), three of which led to papers at SBQS 2023 and VEM 2022.

Teaching

2026	UFRJ: Experimental Software Engineering (graduate, with Guilherme Horta Travassos); Software Quality (undergraduate)
2024–2026	UFF: Computer Programming I; Problem-Solving Laboratory; Object-Oriented Programming I; Introduction to Web Development; Special Topics in Software Engineering II
2021–2025	Extension and short courses on Python, Git, databases, and scientific software (UFF, LIneA)

Professional Service

Organizing	Proceedings Co-Chair, CBSOft 2026; Web Presence Co-Chair, MSR 2026
PC member	SBES 2025 and 2026 (Research; Insightful Ideas and Emerging Results); ESEM 2026 (Registered Reports); MSR 2021 (Shadow PC)
Reviewer	IEEE Transactions on Software Engineering; Empirical Software Engineering; Journal of Systems and Software; Software Quality Journal

Languages

Portuguese (native) · English (fluent) · Italian (intermediate) · Spanish (basic)