



CBSOFT'26

CONGRESSO BRASILEIRO DE SOFTWARE

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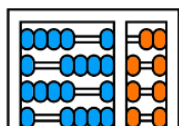
PROCEEDINGS

1st Workshop on Software Engineering for Agentic Systems (SE4AS 2026)

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Preface

The Proceedings of the I Workshop on Software Engineering for Agentic Systems (SE4AS 2026) bring together the papers presented at the workshop, held on September 8, 2026, in São Paulo, Brazil, at the Institute of Mathematics, Statistics and Computer Science (IME-USP), co-located with the XVII Brazilian Conference on Software: Theory and Practice (CBSOft 2026). This first edition features fifteen papers: seven position and vision papers, seven short papers, and one industrial experience report. The papers were selected through a double-blind peer-review process from 21 submissions, resulting in an acceptance rate of approximately 71%. The Program Committee was coordinated by Patrícia D. L. Machado (UFCG), Leandro Balby Marinho (UFCG), and Everton Leandro Galdino Alves (UFCG). This volume was prepared in collaboration with Vânia de Oliveira Neves (UFF), Everton Cavalcante (UFRN), Heleno de Souza Campos Junior (UFRJ), Arthur Pilone (USP), and Silvana Morita (UFGD), the publication coordinators of CBSOft 2026. The papers were submitted on July 10, 2026, accepted on August 3, 2026, and the final versions were submitted on August 10, 2026.

Keynotes



A Research Agenda on Agents and Software Engineering **Marcos Kalinowski, PUC-Rio, Brazil**

Abstract. *Agentic systems are moving software engineering beyond applications that merely invoke LLMs toward systems that can act, coordinate, adapt, use tools, maintain state, and make decisions in dynamic environments. This shift creates major opportunities for automation, productivity, and new forms of human-AI collaboration, but also raises new challenges for requirements, architecture, orchestration, quality, governance, sustainability, and human oversight. This keynote discusses how software engineering must evolve to support the responsible development of agentic systems, while also exploring how agents can transform software engineering itself. The talk will delineate a research agenda on agents and software engineering, arguing that agentic systems should not be treated as isolated AI components or experimental prototypes, but as complex software-intensive systems that require robust engineering foundations, shared methods, reusable patterns, evaluation approaches, and trustworthy practices.*

Short bio. Marcos Kalinowski is a Professor of Software Engineering at PUC-Rio, Brazil, where he leads the Software & AI Engineering Lab (SAIL), supervises doctoral research, and conducts R&D projects in collaboration with industry partners. His research focuses on AI Engineering, AI-Augmented Software Engineering, Empirical Software Engineering, and Human Aspects of Software Engineering, resulting in industry-adopted solutions, patents, and more than 200 scientific articles, mostly published in top-tier venues.

This body of work has achieved significant international visibility, positioning him as the most cited software engineering scientist in Latin America in 2024, 2025, and 2026. Throughout his career he received over 20 distinguished paper awards, including ACM Distinguished Paper Awards at ICSE, CAIN, and CHASE. He holds a research productivity fellowship from the Brazilian Research Council (CNPq), a "Scientist of the State" distinction from the Rio de Janeiro state (FAPERJ), and is a fellow of the Kunumi Institute.

Marcos has held several prominent leadership roles in the international software engineering research community, including the roles of PC chair of ESEM, Chair of the ISERN, and General Chair of ICSE. He serves the research community as an Associate Editor of IEEE Software, IEEE Transactions on Software Engineering, Empirical Software Engineering, and the Journal of Systems and Software. He is an active member of ACM, IEEE, ISERN, and the Brazilian Computer Society.



Scaling Software Development with AI: Practices, Challenges, and Open Questions

Abstract. *The use of AI in software development is advancing rapidly, from assistants that support individual tasks to agents capable of taking on increasingly complex and autonomous activities. As we try to scale this use, however, challenges arise that go beyond the models' ability to generate code and that, often, resemble those we already face when scaling engineering teams: how to divide and coordinate work, share context, review results, and maintain quality. In the talk, Andrews Medina will bring an industry perspective on the current state of software development with AI, discussing practices that are emerging, the challenges encountered in the adoption and use of agents at scale, and the questions that still remain open. More than presenting a definitive model, the talk seeks to share what we are learning in practice while this new way of developing software is still being built.*

Short bio. Andrews Medina has spent his career building and leading engineering teams behind large-scale systems. His work combines leadership and hands-on experience—from writing code to deploying systems that serve millions of users. He held leadership engineering positions at Globo.com, Jusbrasil, and Indaband, where he built and scaled teams and infrastructure to operate at high volume. He is the co-creator of the open-source projects tsuru.io and Splinter. More recently, his focus has shifted to researching sustainable and scalable ways to build AI agents. When he's not architecting distributed systems, he can be found reading or playing guitar.