

CBSOFT'26

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PROCEEDINGS

5th Brazilian Workshop on Intelligent Software Engineering (ISE 2026)

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Willian Oizumi - Google - Brazil

Preface

The Proceedings of the V Brazilian Workshop on Intelligent Software Engineering (ISE 2023) present the papers selected and presented at the edition of the event held on September 11, 2026, in São Paulo, Brazil, in conjunction with the XVII Brazilian Conference on Software: Theory and Practice (CBSoft 2026). In this edition, the proceedings include 19 technical papers and 8 industry/emerging results papers, out of a total of 40 technical paper submissions and 18 industry/emerging results submissions, resulting in acceptance rates of 47% and 44%, respectively. These papers were selected through a double-blind peer-review process. The program committee was coordinated by Danyllo Albuquerque (IFPB), Emanuel Dantas (IFPE), Ademar França de Sousa Neto (UFERSA), and Roberto Felício de Oliveira (UEG), who organized this volume. The papers included in this proceedings series were submitted on July 10, 2026, accepted for publication on August 3, 2026, and had their final versions submitted on August 10, 2026.

Keynote Speakers

What's missing in multimodal AI? Towards spatial awareness, effective tool use and fine-grained understanding

André Araújo - Senior Staff Research Scientist / Tech Lead Manager at Google

Abstract: *The recent progress in multimodal AI systems has enabled a variety of applications, such as natural chatbot interactions, smooth information-seeking journeys, and promising robotics deployments. Despite the significant advancements in the past few years, these systems still face challenges in a number of areas. In this talk, I will highlight recent work from my team and collaborators to enhance three important aspects: spatial awareness, effective tool use and fine-grained understanding. Taken together, these ideas offer directions for designing ever-more-capable multimodal systems and experiences.*

Short Bio: André Araujo is a Senior Staff Research Scientist / Tech Lead Manager at Google DeepMind, based in the São Paulo (Brazil) office. His current work focuses on multimodal AI (computer vision, machine learning, and related areas). André leads a team of researchers distributed between Mountain View (US), São Paulo (Brazil), and Zurich (Switzerland). He graduated with a Ph.D. from Stanford University in 2016 and is a Senior Member of the IEEE.

Intelligent Agents in Software Engineering: From Classical Rationality to LLM-based Agents and Neuro-Symbolic Integration

Evandro Costa - Full Professor at UFAL

Abstract: *This keynote offers a structured perspective on the evolving relationship between intelligent agent research and Software Engineering, spanning classical AI foundations, LLM-based agents, and the current frontier of Neuro-Symbolic Architectures. Beginning with the rational agent model and its implications for software system design, the talk examines Agent-Oriented Software Engineering as an early attempt to make agent abstractions first-class citizens of the SE process. It then addresses Multi-Agent Systems, their coordination mechanisms, and frameworks such as JADE and SPADE. The second half of the talk focuses on the paradigm shift introduced by LLM-based agents, analyzing the ReAct pattern and its continuity with classical BDI architectures, before turning to Neuro-Symbolic Architectures as a response to the verification and reliability challenges that purely neural agents cannot address. The keynote concludes with Neuro-Symbolic Architectures as a promising convergence point, and an assessment of what Software Engineering research must still deliver.*

Short Bio: Evandro de Barros Costa is a Full Professor in the Computing Institute at Federal University of Alagoas (UFAL), Brazil. He received a B.S. degree in Computer Science from Federal University of Paraiba (UFPB), Brazil, in 1988, an M.Sc. and a Ph.D degree in Electrical Engineering from UFPB in 1989 and 1997. His research interests include Generative Artificial Intelligence, agent and multi-systems, knowledge representation and reasoning, explainability in AI, machine learning, and data science. He has published more than 200 papers in international conferences and journals. He has been on the technical program committee of many conferences, such as IJCAI, AAMAS, UAI, AIED, ECAI, and has been a reviewer on some international journals, such as Information Science, IEEE Transactions on Education, and IEEE Transactions on Learning Technologies. Over the years, he has worked extensively on designing and developing AI for education and for the fashion domain.