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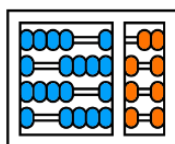
PROCEEDINGS

30th Brazilian Symposium on Programming Languages (SBLP 2026)

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Preface

SBLP has been promoted by the Brazilian Computer Society since 1996, and **this 2026 edition marks a special milestone celebrating its 30th anniversary**. The symposium provides a forum for researchers, students, and professionals to present and discuss ideas and innovations in the design, definition, analysis, implementation, and practical use of programming languages. Since 2010, SBLP has been organized in the context of the Brazilian Conference on Software: Theory and Practice (CBSOft).

For the 2026 edition of SBLP, the Program Committee was composed of 44 members spanning 11 different countries. The symposium received a total of 43 submissions, with 33 submitted to the main track and 10 to the undergraduate track. Of these, 24 papers were accepted (17 from the main track and 7 from the undergraduate track) to fill 5 technical sessions. At least three reviewers evaluated each paper based on its quality, originality, and relevance to the symposium.

We are delighted that the SBLP program includes an outstanding member of the programming language community: a keynote talk by Jeronimo Castrillon from TU Dresden, Germany. We would like to thank all authors who, through their efforts, helped advance the success of SBLP and the state of programming language concepts and systems; the PC members for dedicating time and effort toward producing high-quality reviews in a timely manner; the members of the CBSOft 2026 Organizing Committee for their prompt support and efficient handling of all tasks; SBC-OpenLib for their help in producing the SBLP proceedings; as well as the chairs of previous editions of SBLP for their valuable advice. We hope you enjoy the technical program of SBLP 2026.

Keynote



Towards Compilers for Emerging Heterogeneous Systems **Jeronimo Castrillon - Technische Universität Dresden**

Abstract. *The demise of scaling laws in micro-electronics has led to the so-called golden era of computer architectures. This includes massive parallelism, hardware specialization, new technologies and non Von-Neumann computing models. This talk discusses high-level programming and compiler abstractions for specific application domains such as high-performance computing, cyber-physical systems and machine learning. Concretely, we discuss coordination programming languages, methodologies to exploit and adapt to heterogeneous computing systems, and current efforts to model and compile for non Von-Neumann computing accelerators. The latter includes abstractions and optimizations flows for reconfigurable systems as well as near and in-memory computing architectures. We report on experiences building such abstractions and optimizations in an extensible framework built upon the MLIR compiler infrastructure. We believe that this kind of unification and automation is key to more quickly navigate the heterogeneous landscape of emerging accelerators and to bring the benefits of emerging architectures to a boarder range of applications.*

Short bio. Jeronimo Castrillon is a professor in the Department of Computer Science at the TU Dresden, where he is also affiliated with the Center for Advancing Electronics Dresden (CfAED), the Center for Scalable Data Analytics and Artificial Intelligence Dresden/Leipzig (ScaDS.AI), the 6G-life Hub, and the Barkhausen Institut. He is the head of the Chair for Compiler Construction, with research focus on programming and design methodologies as well as computer architectures for complex emerging computing systems. He received a degree in Electronic Engineering from the Pontificia Bolivariana University in Colombia in 2004, his masters degree from the University of Lugano in Switzerland in 2006 and his Ph.D. degree (Dr.-Ing.) with honors from the RWTH Aachen University in Germany in 2013. In 2014, Prof. Castrillon co-founded Silexica GmbH/Inc, a company that provided programming tools for heterogenous architectures, now with Xilinx/AMD. In 2023, he co-founded Xronos, a company that develops tools and services for safe cyber-physical systems. Prof. Castrillon has more than 150 international publications, is Senior Member IEEE, Senior Member ACM, and is a member of the editorial board of the ACM TODAES, IEEE TC, and IEEE ESL. In 2025 he received a Consolidator Grant from the European Research Council (ERC).