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Murilo C. Naldi · Reinaldo A. C. Bianchi
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Proceedings, Part III

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Preface

The 12th Brazilian Conference on Intelligent Systems (BRACIS 2023) was one of the most important events held in Brazil in 2023 for researchers interested in publishing significant and novel results related to Artificial and Computational Intelligence. The Brazilian Conference on Intelligent Systems (BRACIS) originated from the combination of the two most important scientific events in Brazil in Artificial Intelligence (AI) and Computational Intelligence (CI): the Brazilian Symposium on Artificial Intelligence (SBIA, 21 editions) and the Brazilian Symposium on Neural Networks (SBRN, 12 editions). The Brazilian Computer Society (SBC) supports the event, the Special Committee of Artificial Intelligence (CEIA), and the Special Committee of Computational Intelligence (CEIC). The conference aims to promote theoretical aspects and applications of Artificial and Computational Intelligence and exchange scientific ideas among researchers, practitioners, scientists, engineers, and industry.

In 2023, BRACIS took place in Belo Horizonte, Brazil, from September 25th to 29th, 2023, in the Campus of the Universidade Federal de Minas Gerais. The event was held in conjunction with two other events: the National Meeting on Artificial and Computational Intelligence (ENIAC) and the Symposium on Information and Human Language Technology (STIL).

BRACIS 2023 received 242 submissions. All papers were rigorously reviewed by an international Program Committee (with a minimum of three double-blind peer reviews per submission), followed by a discussion phase for conflicting reports. After the review process, 89 papers were selected for publication in three volumes of the Lecture Notes in Artificial Intelligence series (an acceptance rate of 37%).

The topics of interest included, but were not limited to, the following:

- Agent-based and Multi-Agent Systems
- Bioinformatics and Biomedical Engineering
- Cognitive Modeling and Human Interaction
- Combinatorial and Numerical Optimization
- Computer Vision
- Constraints and Search
- Deep Learning
- Distributed AI
- Education
- Ethics
- Evolutionary Computation and Metaheuristics
- Forecasting
- Foundation Models
- Foundations of AI
- Fuzzy Systems
- Game Playing and Intelligent Interactive Entertainment
- Human-centric AI

- Hybrid Systems
- Information Retrieval, Integration, and Extraction
- Intelligent Robotics
- Knowledge Representation and Reasoning
- Knowledge Representation and Reasoning in Ontologies and the Semantic Web
- Logic-based Knowledge Representation and Reasoning
- Machine Learning and Data Mining
- Meta-learning
- Molecular and Quantum Computing
- Multidisciplinary AI and CI
- Natural Language Processing
- Neural Networks
- Pattern Recognition and Cluster Analysis
- Planning and Scheduling
- Reinforcement Learning

We want to thank everyone involved in BRACIS 2023 for helping to make it a success: we are very grateful to the Program Committee members and reviewers for their volunteered contribution to the reviewing process; we would also like to thank all the authors who submitted their papers and laboriously worked to have the best final version possible; the General Chairs and the Local Organization Committee for supporting the conference; the Brazilian Computing Society (SBC); and all the conference's sponsors and supporters. We are confident that these proceedings reflect the excellent work in the artificial and computation intelligence communities.

September 2023

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