Communications in Computer and Information Science 1171

Commenced Publication in 2007
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Calebe Bianchini · Carla Osthoff ·
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High Performance Computing Systems

19th Symposium, WSCAD 2018
São Paulo, Brazil, October 1–3, 2018
Revised Selected Papers

Springer

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ISSN 1865-0929 ISSN 1865-0937 (electronic)
Communications in Computer and Information Science
ISBN 978-3-030-41049-0 ISBN 978-3-030-41050-6 (eBook)
https://doi.org/10.1007/978-3-030-41050-6

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

The XIX Symposium on High Performance Computing Systems (WSCAD 2018) in São Paulo, promoted by the Brazilian Computer Society (SBC), is one of the most important Brazilian events supported by the Special Committee on Computer Architecture and High-Performance Processing (CEACPAD). CEACPAD promotes this computing area by running activities that integrate theoretical and practical approaches. Therefore, WSCAD promotes these activities by introducing new scientific, technical, and educational breakthroughs in high-performance computing systems to researchers, students, and developers from academia and industry. In 2018, WSCAD was the largest Brazilian national event in this area, allowing the integration and exchange of experiences of its participants, guided by the latest developments in high-performance computing and computer architecture in Brazil and worldwide.

WSCAD 2018 had six distinguished keynote speakers, including leading researches in computer architectures and high-performance computing. WSCAD was also proud to offer several technical sessions in a three-day event: the main track, Undergraduate Research Workshop (WIC), Workshop on Education in Computer Architecture (WEAC), Doctorate and Master's Thesis Contest (CTD), and Workshop on Heterogeneous Computing (WCH). In addition to these technical sessions, there was also the traditional Marathon of Parallel Programming and three short courses. The main speeches addressed topics related to the importance of processors in the security of computational solutions, the behavior of users in an important Brazilian high-performance computing platform, big data applications and deep neural networks, optimizations in parallel codes for supercomputers, and software that facilitate the development of neural network inference on heterogeneous parallel platforms. This edition invited 24 of the best papers from WSCAD 2018, each having submitted an extended version addressing the topic of the conference and containing at least 30% new content regarding any previously published paper, after which 12 papers were selected for publication.

The WSCAD 2018 website (http://wscad.sbc.org.br/2018/) provides access to the talks at the meetings and photos of the activities. The website (http://wscad.sbc.org.br/edicoes/index.html) also gives information on latest events. This book contains the best papers from WSCAD 2018. We would like to thank the entire Organizing Committee and chairs of WSCAD 2018 for their time, dedication, and hard work. We thank Mackenzie Presbyterian University for welcoming WSCAD 2018 and all its attendants, offering kindly an infrastructure at São Paulo. We thank SBC and CEACPAD for their trust and support. We thank the agencies FAPESP, CAPES, and CNPq, and our sponsors Google, Intel, and Laniaq for their financial support. We thank all keynote

speakers who donated their time and shared their experiences. Finally, we would like to thank the authors of the selected papers, the reviewers of all tracks, and all attendants for actually being part of WSCAD 2018.

December 2019

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