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Algorithms and Architectures for Parallel Processing

13th International Conference, ICA3PP 2013
Vietri sul Mare, Italy, December 18-20, 2013
Proceedings, Part I

Springer

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Message from the General Chairs

Welcome to the proceedings of 13th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP 2013), organized by the Second University of Naples with the support of St. Francis Xavier University. It was our great pleasure to hold ICA3PP 2013 in Vietri sul Mare in Italy. In the past, the ICA3PP 2013 conference series was held in Asia and Australia. This was the second time the conference was held in Europe (the first time being in Cyprus in 2008).

Since its inception, ICA3PP 2013 has aimed to bring together people interested in the many dimensions of algorithms and architectures for parallel processing, encompassing fundamental theoretical approaches, practical experimental projects, and commercial components and systems. ICA3PP 2013 consisted of the main conference and four workshops/symposia. Around 80 paper presentations from 30 countries and keynote sessions by distinguished guest speakers were presented during the three days of the conference.

An international conference of this importance requires the support of many people and organizations as well as the general chairs, whose main responsibility is to coordinate the various tasks carried out with other willing and talented volunteers. First of all, we want to thank Professors Andrzej Gościński, Yi Pan, and Yang Xiang, the Steering Committee chairs, for giving us the opportunity to hold this conference and their guidance in organizing it. We would like to express our appreciation to Professors Laurence T. Yang, Jianhua Ma, and Sazzad Hussain for their great support in the organization.

We would like to also express our special thanks to the Program Chairs Professors Joanna Kołodziej, Kaiqi Xiong, and Domenico Talia, for their hard and excellent work in organizing a very strong Program Committee, an outstanding reviewing process to select high-quality papers from a large number of submissions, and making an excellent conference program. Our special thanks also go to the Workshop Chairs Professors Rocco Aversa and Jun Zhang for their outstanding work in managing the four workshops/symposia, and to the Publicity Chairs Professors Xiaojun Cao, Shui Yu, Al-Sakib Khan Pathan, Carlos Westphall, and Kuan-Ching Li for their valuable work in publicizing the call for papers and the event itself. We are grateful to the workshop/symposia organizers for their professionalism and excellence in organizing the attractive workshops/symposia, and the advisory members and Program Committee members for their great support. We are grateful to the local organizing team, for their extremely hard working, efficient services, and wonderful local arrangements.

Last but not least, we heartily thank all authors for submitting and presenting their high-quality papers to the ICA3PP 2013 main conference and workshops/symposia.

December 2013

Beniamino Di Martino
Albert Y. Zomaya
Christian Engelmann

Message from the ICA3PP 2013 Program Chairs

We are very happy to welcome readers to the proceedings of the 13th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP 2013) held in Vietri sul Mare, Italy, in December 2013.

ICA3PP 2013 was the 13th event in this series of conferences that is devoted to algorithms and architectures for parallel processing starting from 1995. ICA3PP is now recognized as a main regular scientific venue internationally, covering the different aspects and issues of parallel algorithms and architectures, encompassing fundamental theoretical approaches, practical experimental results, software systems, and product components and applications.

As the use of computing systems has permeated in every aspect of daily life, their scalability, adaptation, and distribution in human environments have become increasingly critical and vital. Specifically, the main areas of the conference include cluster, distributed and parallel systems, and middeware that cover a variety of topics such as big data, multi-core programming and software tools, distributed scheduling and load balancing, high-performance scientific computing, parallel algorithms, parallel architectures, scalable and distributed databases, dependability in distributed and parallel systems, as well as wireless and mobile computing.

ICA3PP 2013 provided a widely known forum for researchers and practitioners from many countries around the world to exchange ideas on improving the computational power and functionality of computing systems through the exploitation of parallel and distributed computing techniques and models.

The ICA3PP 2013 call for papers received a great deal of attention from the computer science community and 90 manuscripts were submitted from 33 countries. These papers were strictly evaluated on the basis of their originality, significance, correctness, relevance, and technical quality. Each paper was reviewed by at least three members of the Program Committee and external reviewers. Based on these evaluations of the papers submitted, 10 distinguished papers and 31 regular papers were selected for presentation at the conference, representing 11% of acceptance for distinguished papers and 34% for regular papers. This book consists of the two parts: distinguished papers and regular papers. All of them are considered as the papers of the main conference tracks.

The success of any conference depends on its authors, reviewers, and organizers. ICA3PP 2013 was no exception. We are grateful to all the authors who submitted their papers and to all the reviewers for their outstanding work in refereeing the papers on a very tight schedule. We relied heavily on a team of volunteers, especially those in Italy, to keep the ICA3PP 2013 wheel turning.

Last but not least, we would also like to take this opportunity to thank the whole LNCS Springer editorial team for their support in the preparation of this publication.

December 2013

Joanna Kołodziej
Domenico Talia
Kaiqi Xiong

Organization

ICA3PP 2013 was organized by the Second University of Naples, Italy, Department of Industrial and Information Engineering, and St. Francis Xavier University, Canada, Department of Computer Science. It was hosted by the Second University of Naples in Vietri sul Mare (Italy) during December 18–20, 2013.

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