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Algorithms and Architectures for Parallel Processing

10th International Conference, ICA3PP 2010
Busan, Korea, May 21-23, 2010
Workshops, Part II

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Preface

It is our great pleasure to present the proceedings of the symposia and workshops on parallel and distributed computing and applications associated with the ICA3PP 2010 conference. These symposia and workshops provide vibrant opportunities for researchers and industry practitioners to share their research experience, original research results and practical development experiences in the new challenging research areas of parallel and distributed computing technologies and applications.

It was the first time that the ICA3PP conference series added symposia and workshops to its program in order to provide a wide range of topics that extend beyond the main conferences. The goal was to provide a better coverage of emerging research areas and also forums for focused and stimulating discussions. With this objective in mind, we selected three workshops to accompany the ICA3PP 2010 conference:

- FPDC 2010, the 2010 International Symposium on Frontiers of Parallel and Distributed Computing
- HPCTA 2010, the 2010 International Workshop on High-Performance Computing, Technologies and Applications
- M2A 2010, the 2010 International Workshop on Multicore and Multi-threaded Architectures and Algorithms

Each of the symposia / workshops focused on a particular theme and complemented the spectrum of the main conference. All papers published in the workshops proceedings were selected by the Program Committee on the basis of referee reports. Each paper was reviewed by independent referees who judged the papers for originality, quality, contribution, presentation and consistency with the theme of the workshops.

We deeply appreciate the tremendous efforts and contributions of the Chairs of individual symposia / workshops. Our thanks also go to all authors for their valuable contributions and to all the Program Committee members and reviewers for providing timely and in-depth reviews. Particularly, we thank the Local Arrangements Committee for exceptionally nice arrangements. We hope you will enjoy the proceedings.

May 2010

Laurence T. Yang
Jong Hyuk Park
J. Daniel Garcia
Ching-Hsien (Robert) Hsu
Alfredo Cuzzocrea
Xiaojun Cao
Kuo-Chan Huang
Yu Liang

FPDC 2010 Foreword

We would like to welcome you to the proceedings of the 2010 International Symposium on Frontiers of Parallel and Distributed Computing (FPDC 2010) held in Busan, Korea, May 21–23, 2010.

The FPDC 2010 symposium intended to bring together researchers from industry and academia, practitioners, scientists and engineers to discuss novel and innovative research activities, on-going research efforts, emerging parallel/distributed computing technologies and applications. Each paper in the FPDC 2010 symposium was reviewed by at least three Technical Program Committee members of the ICA3PP 2010 conference. After the reviewing process, 29 papers of high quality were invited from 110 submissions for presentation and publication in the FPDC symposium. The acceptance rate of the symposium is 26%. The selected papers cover various topics in parallel and distributed computing systems and technologies with focus on the following areas:

- Parallel Programming and Multicore Technologies
- Grid / Cluster Computing
- Parallel Algorithms and Architectures
- Bioinformatics and Application
- Mobile Computing and Web Services
- Distributed Operating Systems and P2P Computing
- Fault-Tolerant and Information Security

Many individuals contributed to the success of this symposium directly or indirectly. First of all, the symposium Program Co-chairs would like to thank the symposium General Chairs, Laurence T. Yang and Jong Hyuk Park, for their excellent guidance and continuous support. We are very grateful to the ICA3PP 2010 General Chair and Program Chair, Laurence T. Yang and Robert C. Hsu, who helped us in selecting papers for this symposium. Last but not least, we would like to thank all authors for accepting our invitation to publish their papers in this symposium. We hope you will enjoy the proceedings.

May 2010

Laurence T. Yang
Jong Hyuk Park
Ching-Hsien (Robert) Hsu
Sang-Soo Yeo

HPCTA 2010 Foreword

It gives us great pleasure to introduce this collection of papers that were presented at the 2010 International Workshop on High-Performance Computing Technologies and Applications (HPCTA 2010), May 21–23, 2010, at the Busan Lotte Hotel, Busan, Korea.

The Program Committee received 23 submissions, from which it selected 12 for presentation and publication. Each paper was evaluated by three referees. Technical quality, originality, relevance, and clarity were the primary criteria for selection.

We wish to thank all who submitted manuscripts for consideration. We also wish to thank the members of the HPCTA 2010 Program Committee who reviewed all of the submissions.

Whey Fone Tsai
Hsi-Ya Chang
Ching-Hsien Hsu
Kuo-Chan Huang

M2A2 2010 Foreword

It is with great pleasure that we present the proceedings of the 2010 International Workshop on Multicore and Multithreaded Architectures and Algorithms (M2A2 2010) held in conjunction with the 10th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP 2010) at Busan, Korea.

In recent years, multicore systems are dominating the processor market, and it is expected that the number of cores will continue increasing in most of the commercial systems, such as high-performance, desktops, or embedded systems. This trend is driven by the need to increase the efficiency of the major system components, that is, the cores, the memory hierarchy, and the interconnection network. For this purpose, the system designer must trade off performance versus power consumption, which is a major concern in current microprocessors. Therefore new architectures or architectural mechanisms addressing this trade-off are required. In this context, load balancing and scheduling can help to improve energy savings. In addition, it remains a challenge to identify and productively program applications for these architectures with a resulting substantial performance improvement.

The M2A2 2010 workshop provided a forum for engineers and scientists to address the resulting challenge and to present new ideas, applications, and experience on all aspects of multicore and multithreaded systems.

This year, and because of the high quality of the submitted papers, only about 40% of papers were accepted for the conference.

We would like to express our most sincere appreciation to everyone contributing to the success of this workshop. First, we thank the authors of the submitted papers for their efforts in their research work. Then, we thank the TPC members and the reviewers for their invaluable and constructive comments. Finally, we thank our sponsors for the support of this workshop.

Houcine Hassan
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