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Reconfigurable Computing: Architectures, Tools and Applications

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Preface

Reconfigurable computing (RC) systems have generated considerable interest in the embedded and high-performance computing communities over the past two decades, with field programmable gate arrays (FPGAs) as the leading technology at the helm of innovation in this discipline. Achieving orders of magnitude performance and power improvements using FPGAs over traditional microprocessors is not uncommon for well-suited applications. But even with two decades of research and technological advances, FPGA design still presents a substantial challenge and often necessitates hardware design expertise to exploit its true potential. Although the challenges to address the design productivity issues are steep, the promise and the potential of the RC technology in terms of performance, power, size, and versatility continue to attract application design engineers and RC researchers alike.

The International Symposium on Applied Reconfigurable Computing (ARC) aims to bring together researchers and practitioners of RC systems with an emphasis on practical applications and design methodologies of this promising technology. This year's ARC symposium (The sixth ARC symposium) was held in Bangkok, Thailand during March 17–19, 2010, and attracted papers in three primary focus areas: RC applications, RC architectures, and RC design methodologies. A total of 71 papers were submitted to the symposium from 23 countries: Japan (11), Germany (7), UK (6), Spain (6), Belgium (4), China (4), The Netherlands (4), Thailand (4), France (3), Republic of Korea (3), Singapore (3), Canada (2), Republic of India (2), Isle of Man (2), USA (2), Austria (1), Denmark (1), Greece (1), Islamic Republic of Iran (1), Malaysia (1), Myanmar (1), Poland (1), and Tunisia (1). This distribution is reflective of the international engagement in the disciplines related to RC systems.

In all cases, submitted papers were evaluated by at least three members of the Program Committee. After careful selection, 26 papers were accepted as full papers (acceptance rate of 36.6%) and 16 as short papers (global acceptance rate of 59.1%). Out of the total 42 accepted papers, the topic breakdown is as follows: practical applications of the RC technology(17), RC architectures(11), RC design methodologies and tools(13), and RC education(1). The diversity of results and research presented at the symposium led to a very interesting program, which we consider to constitute a representative overview of the on-going research efforts in this field. This LNCS volume includes all accepted papers.

We would like to extend our gratitude to all authors who submitted research papers to the symposium. We would also like to acknowledge the support and contribution of the Steering and Program Committee members towards reviewing papers, paper selection, and offering valuable suggestions and guidance. We thank the Organizing Committee members for their untiring efforts toward making this year's ARC symposium a grand success. We also thank Springer for their

continued support of this event. Special thanks are due to the distinguished invited speakers for their contributions to the technical program.

January 2010

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