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Koen De Bosschere
David Kaeli
Per Stenström
David Whalley
Theo Ungerer (Eds.)

High Performance Embedded Architectures and Compilers

Second International Conference, HiPEAC 2007
Ghent, Belgium, January 2007
Proceedings

 Springer

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Preface

It is a pleasure for us to introduce the proceedings of the second edition of the International Conference on High-Performance Embedded Architectures and Compilers (HiPEAC 2007). This conference fills a gap in that it focuses on how to meet the challenging performance requirements of future embedded systems through a concerted effort at both sides of the hardware/software interface. As a result, this year's edition covered topic areas spanning from low-power, secure, and adaptive architectures via evaluation tools/methods to compiler optimization techniques. The program also featured a keynote presentation by Tom Conte of North Carolina State University.

This year we received 65 submissions of which 9 papers were committee papers. Papers were submitted from 15 different nations (about 40 % from Europe, 30% from Asia, and 30% from North America), which is a token of the global visibility of the conference.

We had the luxury of having a strong Program Committee consisting of 34 experts in all areas within the scope of the conference and we kept all reviewing within the Program Committee. Thus, each paper was typically reviewed by four Program Committee members. We collected 258 reviews and we were happy to note that each paper was rigorously reviewed before any decisions were made, despite the fact that we shortened the review phase and that reviewing took place during most reviewers' precious vacation time.

The Program Committee meeting was held in the center of Rome, the ancient capital of Italy. Despite a long trip for many members of the Program Committee, 21 members attended the meeting. For virtually all papers, more than one reviewer was present. The papers were discussed in the order of average score including Program Committee papers too. When a paper was discussed where a participating Program Committee member was either a co-author or had conflicts with that paper, that person left the room. At the end, we accepted 19 papers of which two are Program Committee papers, yielding an acceptance rate of 29%.

The strong program of this edition was due to the hard work of many people. First of all, we would like to thank all contributing authors for the fine work they submitted to this conference. The timely delivery of reviews and the thoughtful analysis of these papers at the Program Committee meeting confirmed that we really recruited a top-class Program Committee for this year's conference. Thanks to all of you for your hard work!

Michiel Ronsse, the conference software mastermind, made the review process run very smoothly. In addition, he added important functionality to the software to make the Program Committee meeting as efficient as possible.

We would also like to thank Nacho Navarro (Publicity Chair), Thomas Van Parys (Web Chair), and Wouter De Raeye (Financial Chair) for their efforts in promoting the conference and for taking care of the administration.

Many thanks also go to Theo Ungerer (Publication Chair), his scientific assistants Faruk Bagci and Jörg Mische for volume preparation, and Springer for publishing the proceedings in the *Lecture Notes in Computer Science* series.

We would also like to thank Lieven Eeckhout for organizing an extra day of high-quality workshops and tutorials. We are convinced that these extra activities made the conference even more attractive, hence strongly contributing to the success of HiPEAC 2007.

Finally, we would also like to mention the support from the Sixth Framework Programme of the European Union, represented by project officer Mercè Griera i Fisa, for sponsoring the event and for the travel grants.

We hope that you learn and get much inspiration from the high-quality contributions in this volume.

October 2006

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Invited Program

Keynote: Insight, Not (Random) Numbers: An Embedded Perspective

Thomas M. Conte

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Abstract. Hamming said that the purpose of computing was “insight, not numbers.” Yet benchmarking embedded systems is today a numbers game. In this talk, I will dissect Hamming’s famous quote and provide some reasons to hope we can making benchmarking of embedded systems into a science. In particular, I will discuss how to model and measure quantities so that one can gain confidence in the results. I will use the industry standard EEMBC benchmark set as an example. Along the way, I will (I hope) give some insight into what the EEMBC benchmarks are trying to test.

