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Proceedings

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Preface

On behalf of all of the people involved in the program selection, the program committee members as well as numerous other reviewers, we are both relieved and pleased to present you with the proceedings of the 2006 Asia-Pacific Computer Systems Architecture Conference (ACSAC 2006), which is being hosted in Shanghai on September 6–8, 2006.

This is the 11th in a series of conferences, which started life in Australia, as the computer architecture component of the Australian Computer Science Week. In 1999 it ventured away from its roots for the first time, and the fourth Australasian Computer Architecture Conference was held in the beautiful city of Sails (Auckland, New Zealand). Perhaps it was because of a lack of any other computer architecture conference in Asia or just the attraction of traveling to the Southern Hemisphere but the conference became increasingly international during the subsequent three years and also changed its name to include Computer Systems Architecture, reflecting more the scope of the conference, which embraces both architectural and systems issues. In 2003, the conference again ventured offshore to reflect its constituency and since then has been held in Japan in the beautiful city of Aizu-Wakamatsu, followed by Beijing and Singapore. This year it again returns to China and next year will move to Korea for the first time, where it will be organized by the Korea University.

To understand the scope and constituency of the conference, papers have been submitted from China, Taiwan, Korea, Japan, Australia, the UK, the Netherlands, Brazil, the USA, Norway, Sweden, Iran, Cyprus, India and Romania with the majority of papers coming from the Asia-Pacific region. The scope of the conference can be gleaned by looking at the diversity of submissions, which include papers on processor and network design, reconfigurable computing and operating systems, including both low-level design issues in hardware and systems as well as papers describing large and significant computer-based infrastructure projects. In keeping with the trends in this field, many of the papers that reflect the changing nature of computing systems and the constraints that the industry is working under. For example, there are many papers that reflect the move to concurrency on chip in multi-core devices, and many more are concerned with the significant problems industry will face with stricter budgets in power dissipation.

In addition to the submitted papers we have three keynote presentations. These presentations reflect the changing aspects of our industry as described above. Guang R. Gao, who is the Distinguished Professor of Electrical and Computer Engineering at Delaware University, will give a presentation on his work in programming chip multiprocessors and other highly concurrent systems. Gao's research is closely linked to IBM's recently announced cell processor, and he is developing compilers that enable thousands of processors to work together smoothly and efficiently by dividing various tasks among them. This work is conducted through the Computer Architecture and Parallel Systems Laboratory (CAPSL). Our second keynote speaker is from Europe and represents a key company in the embedded computer systems area. Vladimir Vasekin is a Russian Computer Scientist who was

recruited by ARM Ltd. in 2003. He started his career working in the Kronos Research Group at Novosibirsk University, developing the first 32-bit Russian workstations. While at ARM he has been involved in extensions to the ARM V6 architecture as well as in optimizing power dissipation in systems on chip. Our final invited speaker is Alex Shafarenko, who is professor of Software Engineering at the University of Hertfordshire in the UK and coordinator of the Compiler Technology and Computer Architecture Research Group (CTCA). Shafarenko is undertaking pioneering work in strongly-typed languages for coordinating concurrency in an asynchronous distributed environment.

Finally we would like to thank all of those who worked hard to make ACSAC 2006 a success this year. This includes all of the authors for submitting their work and the program committee and reviewers, without whose significant effort in producing reviews by our deadlines, we would have been unable to put this conference program together. Finally we thank the other General Chairs, Minglu Li of Shanghai Jiao Tong University and Minyi Guo from the University of Aizu for their effort in managing the conference arrangements and last and by no means least, Feilong Tang, also from Shanghai Jiao Tong University, who was in charge of local arrangements.

June 2006

Chris Jesshope
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