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Atsushi Ohori
Japan Advanced Institute of Science and Technology
School of Information Science
Tatsunokuchi, Ishikawa 923-1292, Japan
E-mail: ohori@jaist.ac.jp

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Foreword

With warm-hearted and friendly promotion by our Japanese friends Prof. Atsushi Ohori, Prof. Tetsuo Ida, and Prof. Zhenjiang Hu, and other distinguished professors and scholars from countries and regions such as Japan, South Korea, Singapore, and Taiwan, the 1st Asian Symposium on Programming Languages and Systems (APLAS 2003) took place in Beijing. We received 76 papers, among which 24 were selected for the proceedings after serious evaluation, which fully demonstrates the high quality of the collected papers. I hereby, on behalf of the Program Committee and the Organization Committee of the symposium, would like to extend the warmest welcome and hearty thanks to all colleagues who attended the symposium, all scholars who generously contributed their papers, and all those who were actively dedicated to the organization of this symposium.

Over the past decade, the Asian economy has undergone rapid development. Keeping pace with this accelerated economic growth, Asia has made great headway in software, integrated circuits, mobile communication and the Internet. All this has laid a firm material foundation for undertaking theoretical research on computer science and programming languages. Therefore, to meet the increasing demands of the IT market, great opportunities and challenges in advanced research in these fields. I strongly believe that in the coming future, with the persistent efforts of our colleagues, the Asian software industry and research on computer science will be important players in the world economy, on an equal footing with their counterparts in the United States and Europe.

I am of the opinion that, to enhance Asian computer science research, much more attention should be paid to the new issues and technical problems brought with the development of the software industry in the world, particularly in Asia, and accordingly, we should advance computer science research in Asia to a position with distinctive features and great prospects. In the course of the Asian economic development over the past 10 years, the pursuit of highly reliable software and efficient software development processes has created urgent demands for basic research on computer science. In addition, theoretical guidelines are required to solve the problems of congestion, waste and security generated in the storage, transmission and processing of massive information on the Internet. Under such circumstances, it is expected that a new discipline, namely Information Physics, will be born in the near future.

Dear colleagues, as leading theorists of computer science in Asia, we should take up this task and put all our efforts into achieving creative breakthroughs in the fields mentioned above, and promoting our ongoing contacts and cooperation with our European and American colleagues, and thus turn Asia into a promising land of research on computer science and technology, and make a historical contribution to the progress of mankind as a whole.

September 2003 Wei Li

Preface

This volume contains the proceedings of APLAS 2003, the 1st Asian Symposium on Programming Languages and Systems, held in Beijing, China, November 27–29, 2003, sponsored by the Asian Association for Foundation of Software (AAFS) and Beihang University.

The symposium was devoted to foundational issues in programming languages and systems, covering (but not limited to) the following areas:

- concurrency and parallelism,
- language implementation and optimization,
- mobile computation and security,
- program analysis and verification,
- program transformation and calculation,
- programming paradigms and language design,
- programming techniques and applications,
- semantics, categorical and logical foundations,
- tools and environments, and
- type theory and type systems.

In response to the call for papers, 76 papers were submitted by authors from Australia, Austria, China, Denmark, France, India, Italy, Japan, Korea, Portugal, Singapore, Spain, Taiwan, the United Arab Emirates, the UK, and the USA. Each paper was reviewed by at least three program committee members with the help of external expert reviewers. The program committee meeting was conducted electronically from August 5 through August 15th. The competition was very tough and the deliberation was a difficult process. After careful and thorough discussion, the program committee selected 24 papers. I would like to sincerely thank all the members of the APLAS 2003 Program Committee for their excellent job, and all the external reviewers for their invaluable contribution. The submission and review process was managed using the CyberChair system.

In addition to the 24 contributed papers, the symposium also included talks by three invited speakers: Thomas A. Henzinger (University of California at Berkeley, USA), Simon Peyton Jones (Microsoft Research, UK), and Wen-tsun Wu (Academia Sinica, China). I am grateful to the three invited speakers.

Many people helped in the effort to establish this new Asian-based conference series, APLAS, as a high-quality forum to serve the worldwide programming languages community. Without their help and enthusiastic support, APLAS 2003 would not have happened. My special thanks to our general chair, Wei Li, whose initiative and efforts made the first APLAS in Beijing possible. I would like to thank Shilong Ma. In addition to his hard work as a program committee member, he helped us to solve numerous problems we encountered during our planning, and during APLAS 2003, itself. The AAFS steering committee provided advice and suggestions. I would particularly like to thank Tetsuo Ida, who provided advice and suggestions at several critical moments.

September 2003 Atsushi Ohori

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