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# Programming Languages and Systems

Third Asian Symposium, APLAS 2005  
Tsukuba, Japan, November 2-5, 2005  
Proceedings



Springer

Volume Editor

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# Foreword

APLAS 2005 was the Asian Symposium on Programming Languages and Systems, held in Tsukuba, Japan in November 2–5, 2005. It was the latest event in the series of annual meetings started in 2000 by Asian researchers in the field of programming languages and systems. The first three were organized as workshops, and were held in Singapore (2000), Daejeon (2001), and Shanghai (2002). The enthusiasm there, encouraged by the rich production of original research papers, and the support of the international research communities in programming languages and systems, led to the first APLAS as a symposium in Beijing (2003), followed by the one in Taipei (2004). APLAS 2005 was the third symposium in the series.

In the past five years we have witnessed the growing role of APLAS as one of the key research communities of the world. This is not only because Asia and the Pacific Rim is a fast-growing region of IT industries, but because it is a region of highly cultivated human resources. We are confident that forums like APLAS will further engender interaction among Asian researchers and with the rest of the world.

As for the scope of APLAS, from the very beginning we have been striving to achieve the cross-fertilization of theories and system developments of programming and programming languages. The papers selected for the publication of this volume of the proceedings are the evidence of our efforts. We are very grateful to the contributors of the submitted papers; they came not only from Asia and Australia but from Europe and North America.

The symposium was held in the campus of the University of Tsukuba. Bringing APLAS 2005 to its realization was the result of the collaborative work of the Organizing Committee and various organizations that supported us. Foremost, I would like to express my thanks for the work of the Program Committee chaired by Kwangkeun Yi, who was responsible for the collection of high-quality papers on the state of the art of the research in programming languages and systems. We had three invited talks, by Patrick Cousot, Haruo Hosoya and Thomas Reps, to whom we are very grateful. We would like to express our thanks for the support by AAFS (Asian Association for Foundation of Software), JSSST (Japan Society for Software Science and Technology), IISF (International Information Science Foundation), and the University of Tsukuba. Last but not least, I would like to express our thanks to Springer for its continued support in the publication of the proceedings in the Lecture Notes in Computer Science series.

# Preface

This volume contains the proceedings of the 3rd Asian Symposium on Programming Languages and Systems (APLAS 2005), which took place in Tsukuba, Japan, November 2–5, 2005. The symposium was sponsored by the Asian Association for Foundation of Software (AAAF), Japan Society for Software Science and Technology (JSSST), International Information Science Foundation in Japan (IISF), and University of Tsukuba.

Among the 78 full submissions, the Program Committee selected 24 papers. Almost all submissions were reviewed by three (or more) PC members with the help of external reviewers. Papers were selected during a 16-day electronic discussion phase. I would like to sincerely thank the members of the APLAS 2005 Program Committee for their thorough reviews and dedicated involvement during the discussion phase. I would also like to thank all the external reviewers for their invaluable contributions.

The symposium program covered both theoretical and practical topics in programming languages and systems. In addition to the 24 accepted papers, the symposium also featured invited talks by three distinguished speakers: Patrick Cousot (École Normale Supérieure, Paris, France), Haruo Hosoya (University of Tokyo, Japan), and Thomas Reps (University of Wisconsin, Madison, USA).

Many people helped to establish APLAS as a high-quality forum in Asia that serves programming languages and systems researchers worldwide. The APLAS series started after informal yet well-attended workshops in Singapore (2000), Daejeon (2001), and Shanghai (2002). After the workshops, the first two formal symposiums were held in Beijing (2003) and Taipei (2004). This third symposium inherited much from this past momentum and owed many people for its success.

I am grateful to the General Chair, Tetsuo Ida, for his invaluable support and guidance that made our symposium in Tsukuba possible and enjoyable. I am indebted to our Local Arrangements Chair, Mircea Marin, for his considerable effort to plan and organize the meeting itself. I thank Hongseok Yang for serving as the Poster Chair. Last but not least, I also thank Deokhwan Kim for his help in handling the OpenConf system and preparing these proceedings.

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