Foreword

The Sixth International Conference on Implementation and Application of Automata (CIAA 2001) — the first one held in the southern hemisphere — was held at the University of Pretoria in Pretoria, South Africa, on 23–25 July 2001.

This volume of Springer's Lecture Notes in Computer Science contains all the papers (including the invited talk by Gregor v. Bochmann) that were presented at CIAA 2001, as well as an expanded version of one of the poster papers displayed during the conference.

The conference addressed the issues in automata application and implementation. The topics of the papers presented in this conference ranged from automata applications in software engineering, natural language and speech recognition, and image processing, to new representations and algorithms for efficient implementation of automata and related structures.

Automata theory is one of the oldest areas in computer science. Research in automata theory has been motivated by its applications since its early stages of development. In the 1960s and 1970s, automata research was motivated heavily by problems arising from compiler construction, circuit design, string matching, etc. In recent years, many new applications of automata have been found in various areas of computer science as well as in other disciplines. Examples of the new applications include statecharts in object-oriented modeling, finite transducers in natural language processing, and nondeterministic finite-state models in communication protocols. Many of the new applications cannot simply utilize the existing models and algorithms in automata theory to solve their problems. New models, or modifications of the existing models, are needed to satisfy their requirements. Also, the sizes of the typical problems in many of the new applications are astronomically larger than those used in the traditional applications. New algorithms and new representations of automata are required to reduce the time and space requirements of the computation.

The CIAA conference series provides a forum for the new problems and challenges. In these conferences, both theoretical and practical results related to the application and implementation of automata were presented and discussed, and software packages and toolkits were demonstrated. The participants of the conference series were from both research institutions and industry.

We thank all of the program committee members and referees for their efforts in refereeing and selecting papers. This volume was edited with much help from Nanette Saes and Hanneke Driever, while the conference itself was run smoothly with the help of Elmarie Willemse, Nanette Saes, and Theo Koopman.

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CIAA 2001 Program Committee