

# Foreword

The Fifth International Conference on Implementation and Application of Automata (CIAA 2000) was held at the University of Western Ontario in London, Ontario, Canada on July 24-25, 2000. This conference series was formerly called the International Workshop on Implementing Automata (WIA)

This volume of the Lecture Notes in Computer Science series contains all the papers that were presented at CIAA 2000, and also the abstracts of the poster papers that were displayed during the conference.

The conference addressed issues in automata application and implementation. The topics of the papers presented at 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 always 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 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 do not and cannot simply apply the existing models and algorithms in automata theory to their problems. New models, or modifications of the existing models, are needed to satisfy their requirements. A feature that can be found in many of the new applications is that the sizes of the problems in practice are astronomically larger than those occurring in the traditional applications. New algorithms and new representations of automata are in demand to reduce the time and space requirements of the computation.

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

I wish to thank all the program committee members and referees for their efforts in refereeing and selecting papers. This volume is edited with much help from Andrei Păun and Mihaela Păun. Their efforts are very much appreciated.

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the Lecture Notes in Computer Science series and Springer-Verlag, in particular Ms. Anna Kramer, for their help in publishing this volume.

*May 2001*

Sheng Yu

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