Lecture Notes in Computer Science 4287

Commenced Publication in 1973
Founding and Former Series Editors:
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DNA Computing

12th International Meeting on DNA Computing, DNA12
Seoul, Korea, June 5-9, 2006
Revised Selected Papers

Springer

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Library of Congress Control Number: 2006938335

CR Subject Classification (1998): F.1, F.2.2, I.2.9, J.3

LNCS Sublibrary: SL 1 – Theoretical Computer Science and General Issues

ISSN 0302-9743
ISBN-10 3-540-49024-8 Springer Berlin Heidelberg New York
ISBN-13 978-3-540-49024-1 Springer Berlin Heidelberg New York

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 11925903 06/3142 5 4 3 2 1 0

Preface

This volume is based on papers presented at the 12th International Meeting on DNA Computing (DNA12), which was held during June 5–9, 2006 at Seoul National University, Seoul, South Korea. DNA computing is an interdisciplinary field across computer science, mathematics, molecular biology, chemistry, physics, and nanotechnology. The central theme is to develop novel computing paradigms based on DNA. The annual meeting on DNA computing provides a major forum for scientists to present and discuss their latest results and promotes interactions between experimentalists and theoreticians.

The DNA12 Program Committee received 72 submissions and the current volume contains a selection of 34 papers from the preliminary proceedings. All selected papers were significantly revised by the authors according to the discussion during the meeting. It is our intention to cover all major areas in DNA computing, including demonstrations of biomolecular computing, theoretical models of biomolecular computing, biomolecular algorithms, in vitro and in vivo computational processes, analysis and theoretical models of laboratory techniques, biotechnological and other applications of DNA computing, DNA nanostructures, DNA nanodevices, DNA error evaluation and correction, in vitro evolution, molecular design, self-assembly systems, nucleic acid chemistry, and simulation tools. However, some papers on experimental works are not included because the authors would like to publish their works in more traditional journals.

We have organized the current volume by classifying 34 papers into 8 categories whose topical section headings (and breakdowns) are: Molecular and Membrane Computing Models (6), Complexity Analysis (3), Sequence and Tile Designs and Their Properties (5), DNA Tile Self-Assembly Models (4), Simulator and Software for DNA Computing (4), DNA Computing Algorithms and New Applications (4), Novel Experimental Approaches (3), and Experimental Solutions (5).

The editors would like to thank all participants, referees, the Program Committee, the Organization Committee, all assistants, and all sponsors for making this conference and this volume possible.

September 2006

Chengde Mao
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Table of Contents

Molecular and Membrane Computing Models

Complexity Analysis

Sequence and Tile Designs and Their Properties

DNA Tile Self-assembly Models

Simulator and Software for DNA Computing

DNA Computing Algorithms and New Applications

Novel Experimental Approaches

Experimental Solutions