Algorithms and Computation
ICT Education
Algorithms and Data Structures for External Memory describes several useful paradigms for the design and implementation of efficient external memory (EM) algorithms and data structures. The problem domains considered...
Online Library Algorithms And Data Structures
Ku Ittc

include sorting, permuting, FFT, scientific computing, computational geometry, graphs, databases, geographic information systems, and text and string processing.

Data Structures and Algorithms

Proceedings of the Fifteenth Annual Conference of the Cognitive Science Society

Data Structure for 'C' Programming The papers in this volume were selected for presentation at the Eleventh Annual International Symposium on Algorithms and Computation (ISAAC 2000), held on 18(20 December, 2000 at the Institute of Information Science, Academia Sinica, Taipei, Taiwan. Previous meetings were held in Tokyo (1990), Taipei (1991), Nagoya (1992), Hong Kong (1993), Beijing (1994), Cairns (1995), Osaka (1996), Singapore (1997), Taejon (1998), and Chennai (1999). Submissions to the conference this year were conducted entirely electronically. Thanks to the excellent software developed by the Institute of Information Science, Academia Sinica, we were able to carry out virtually all communication via the World Wide Web. In response to the call for papers, a total of 87 extended abstracts were submitted from 25 countries. Each submitted paper was handled by at least three program committee members, with the assistance of a number of external reviewers, as indicated by the referee list found in the proceedings. There were many more acceptable papers than there was space available in the symposium program, which made the program committee's task extremely difficult. Finally 46 papers were selected for presentation at the Symposium. In addition to these contributed papers, the conference also included two invited presentations by Dr. Jean-Daniel Boissonnat, INRIA Sophia-Antipolis, France and Professor Jin-Yi Cai, University of Wisconsin at Madison, Wisconsin, USA. It is expected that most of the accepted papers will appear in a more complete form in scientific journals.

Algorithms and Data Structures This book constitutes the refereed proceedings of the 17th Annual Symposium on Combinatorial Pattern Matching, CPM 2006, held in Barcelona, Spain in July 2006. The 33 revised full papers presented together with 3 invited talks were carefully reviewed and selected from 88 submissions. The papers are organized in topical sections on data structures, indexing data structures, probabilistic and algebraic techniques, applications in molecular biology, string matching, data compression, and dynamic programming.

Combinatorial Pattern Matching This book constitutes the refereed proceedings of the 22nd Annual Symposium on Combinatorial Pattern Matching, CPM 2011, held in Palermi, Italy, in June 2011. The 36 revised full papers presented together with 3 invited talks were carefully reviewed and selected from 70 submissions. The papers address issues of searching and matching strings and more complicated patterns such as trees, regular expressions, graphs, point sets, and arrays. The goal is to derive non-trivial combinatorial properties of such structures and to
exploit these properties in order to either achieve superior performance for the corresponding computational problems or pinpoint conditions under which searches cannot be performed efficiently. The meeting also deals with problems in computational biology, data compression and data mining, coding, information retrieval, natural language processing and pattern recognition.

Algorithms and Data Structures We are very pleased to present to you this LNCS volume, the proceedings of the 11th International Conference on Parallel Problem Solving from Nature (PPSN 2010). PPSN is one of the most respected and highly regarded conference series in evolutionary computation, and indeed in natural computation as well. This biennial event was first held in Dortmund in 1990, and then in Brussels (1992), Jerusalem (1994), Berlin (1996), Amsterdam (1998), Paris (2000), Granada (2002), Birmingham (2004), Reykjavik (2006) and again in Dortmund in 2008. PPSN 2010 received 232 submissions. After an extensive peer review process involving more than 180 reviewers, the program committee chairs went through all the review reports and ranked the papers according to the reviewers’ comments. Each paper was evaluated by at least three reviewers. Additional reviewers from the appropriate branches of science were invoked to review into disciplinary papers. The top 128 papers were finally selected for inclusion in the proceedings and presentation at the conference. This represents an acceptance rate of 55%, which guarantees that PPSN will continue to be one of the conferences of choice for bio-inspired computing and metaheuristics researchers all over the world who value the quality over the size of a conference. The papers included in the proceedings volumes cover a wide range of topics, from evolutionary computation to swarm intelligence, from bio-inspired computing to real-world applications. Machine learning and mathematical games supported by evolutionary algorithms as well as memetic, agent-oriented systems are also represented. They all are the latest and best in natural computation. The proceedings are composed of two volumes divided into nine thematic sections.

Parallel Problem Solving from Nature, PPSN XI

Database and Expert Systems Applications This book constitutes the refereed proceedings of the 7th Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD 2003, held in Seoul, Korea in April/Mai 2003. The 38 revised full papers and 20 revised short papers presented together with two invited industrial contributions were carefully reviewed and selected from 215 submissions. The papers are presented in topical sections on stream mining, graph mining, clustering, text mining, Bayesian networks, association rules, semi-structured data mining, classification, data analysis, and feature selection.

Advances in Knowledge Discovery and Data Mining The abstracts and papers in this volume were presented at the Fifth Annual International Computing and Combinatorics Conference (COCOON ’99), which was held in Tokyo, Japan from July 26 to 28, 1999. The topics cover most aspects of theoretical computer...
science and combinatorics pertaining to computing. In response to the call for papers, 88 high-quality extended abstracts were submitted internationally, of which 46 were selected for presentation by the program committee. Every submitted paper was reviewed by at least three program committee members. Many of these papers represent reports on continuing search, and it is expected that most of them will appear in a more polished and complete form in scientific journals. In addition to the regular papers, this volume contains abstracts of two invited plenary talks by Prabhakar Raghavan and Seinosuke Toda. The conference also included a special talk by Kurt Mehlhorn on LEDA (Library of Efficient Data types and Algorithms). The Hao Wang Award (inaugurated at COCOON 97) is given to honor the paper judged by the program committee to have the greatest scientific merit. The recipients of the Hao Wang Award 1999 were Hiroshi Nagamochi and Toshio Ibaraki for their paper "An Approximation for Finding a Smallest 2-Edge-Connected Subgraph Containing a Specified Spanning Tree".

Algorithms in Bioinformatics This is an excellent, up-to-date and easy-to-use text on data structures and algorithms that is intended for undergraduates in computer science and information science. The thirteen chapters, written by an international group of experienced teachers, cover the fundamental concepts of algorithms and most of the important data structures as well as the concept of interface design. The book contains many examples and diagrams. Whenever appropriate, program codes are included to facilitate learning. This book is supported by an international group of authors who are experts on data structures and algorithms, through its website at http://www.cs.pitt.edu/jung/GrowingBook/, so that both teachers and students can benefit from their expertise.

Algorithms and Computation This book constitutes the refereed proceedings of the 12th International Conference on Algorithms and Computation, ISAAC 2001, held in Christchurch, New Zealand in December 2001. The 62 revised full papers presented together with three invited papers were carefully reviewed and selected from a total of 124 submissions. The papers are organized in topical sections on combinatorial generation and optimization, parallel and distributed algorithms, graph drawing and algorithms, computational geometry, computational complexity and cryptology, automata and formal languages, computational biology and string matching, and algorithms and data structures.

Computer Methods in Mechanics This book constitutes the refereed proceedings of the 13th Annual International Symposium on Algorithms and Computation, ISAAC 2002, held in Vancouver, BC, Canada in November 2002. The 54 revised full papers presented together with 3 invited contributions were carefully reviewed and selected from close to 160 submissions. The papers cover all relevant topics in algorithmics and computation, in particular computational geometry, algorithms and data structures, approximation algorithms, randomized algorithms, graph drawing and graph algorithms, combinatorial optimization, computational biology, and more.
Algorithms in Bioinformatics The book is an introduction to the theory of cubic metaplectic forms on the 3-dimensional hyperbolic space and the author’s research on cubic metaplectic forms on special linear and symplectic groups of rank 2. The topics include: Kubota and Bass-Milnor-Serre homomorphisms, cubic metaplectic Eisenstein series, cubic theta functions, Whittaker functions. A special method is developed and applied to find Fourier coefficients of the Eisenstein series and cubic theta functions. The book is intended for readers, with beginning graduate-level background, interested in further research in the theory of metaplectic forms and in possible applications.

In-Memory Data Management This book constitutes the refereed proceedings of the 46th Annual Conference of the Southern African Computer Lecturers’ Association on ICT Education, SACLA 2017, held in Magaliesburg, South Africa, in July 2017. The 22 revised full papers presented together with an extended abstract of a keynote paper were carefully reviewed and selected from 63 submissions. The papers are organized in topical sections on ICT students of a new generation; technology and gaming in nowadays education; educational cooperation with the ICT industry; computer programming education; ICT courses and curricula.

Data Structures, Near Neighbor Searches, and Methodology

IUTAM Symposium on Evolutionary Methods in Mechanics

Algorithms and Computation This volume constitutes the refereed proceedings of the four workshops held at the 30th International Conference on Database and Expert Systems Applications, DEXA 2019, held in Linz, Austria, in August 2019: The 10th International Workshop on Biological Knowledge Discovery from Data, BIOKDD 2019, the 3rd International Workshop on Cyber-Security and Functional Safety in Cyber-Physical Systems, IWCFS 2019, the 1st International Workshop on Machine Learning and Knowledge Graphs, MLKgraphs2019, and the 16th International Workshop on Technologies for Information Retrieval, TIR 2019. The 26 selected papers discuss a range of topics including: knowledge discovery, biological data, cyber security, cyber-physical system, machine learning, knowledge graphs, information retriever, data base, and artificial intelligent.

Parallel Processing and Applied Mathematics This book constitutes the refereed proceedings of the 13th Annual International Symposium on Algorithms and Computation, ISAAC 2002, held in Vancouver, BC, Canada in November 2002. The 54 revised full papers presented together with 3 invited contributions were carefully reviewed and selected from close to 160 submissions. The papers cover all relevant topics in algorithmics and computation, in particular computational geometry, algorithms and data structures, approximation algorithms, randomized
algorithms, graph drawing and graph algorithms, combinatorial optimization, computational biology, computational finance, cryptography, and parallel and distributed algorithms.

Computing and Combinatorics This volume features the complete text of all regular papers, posters, and summaries of symposia presented at the 15th annual meeting of the Cognitive Science Society.

Physics-Compatible Finite Element Methods for Scalar and Tensorial Advection Problems This volume comprises the proceedings of the 6th International Conference on Parallel Processing and Applied Mathematics - PPAM 2005, which was held in Poznan, the industrial, academic and cultural center in the western part of Poland, during September 11-14, 2005.

Advances in Design Automation, 1988 The articles in this book present advanced soft methods related to genetic and evolutionary algorithms, immune systems, formulation of deterministic neural networks and Bayesian NN. Many attention is paid to hybrid systems for inverse analysis fusing soft methods and the finite element method. Numerical efficiency of these soft methods is illustrated on the analysis and design of complex engineering structures.

Algorithms and Computation "The Fifth SEI Conference on Software Engineering was held in Pittsburgh, Pennsylvania, October 7-8, 1991. This annual conference is a forum for discussion of software engineering education and training among members of the academic, industry, and government communities. It is funded by the Education Program of the Software Engineering Institute, a federallyfunded research and development center of the U.S. Department of Defense. For the first time in 1991 it was held in conjunction with the Association for Computing Machinery and the IEEE Computer Society. Seven sessions addressed: software project courses, software engineering training in government and industry, curriculum issues, software engineering teaching styles, teaching design, topics in real time and environments, and developing software engineering expertise."--PUBLISHER'S WEBSITE.

Advances of Soft Computing in Engineering This book constitutes the refereed proceedings of the 14th Algorithms and Data Structures Symposium, WADS 2015, held in Victoria, BC, Canada, August 2015. The 54 revised full papers presented in this volume were carefully reviewed and selected from 148 submissions. The Algorithms and Data Structures Symposium - WADS (formerly Workshop on Algorithms And Data Structures), which alternates with the Scandinavian Workshop on Algorithm Theory, is intended as a forum for researchers in the area of design and analysis of algorithms and data structures. WADS includes papers presenting original research on algorithms and data structures in all areas, including bioinformatics, combinatorics, computational geometry, databases, graphics, and parallel and distributed computing.
Understanding Algorithms and Data Structures Proceedings of the IUTAM Symposium held in Cracow, Poland, 24-27 September 2002

Computing and Combinatorics This volume constitutes the proceedings of the Fourth International Workshop on Algorithms and Data Structures, WADS '95, held in Kingston, Canada in August 1995. The book presents 40 full refereed papers selected from a total of 121 submissions together with invited papers by Preparata and Bilardi, Sharir, Toussaint, and Vitanyi and Li. The book addresses various aspects of algorithms, data structures, computational geometry, scheduling, computational graph theory, and searching.

Algorithms and Computation These proceedings contain papers from the 2009 Workshop on Algorithms in Bioinformatics (WABI), held at the University of Pennsylvania in Philadelphia, Pennsylvania during September 12-13, 2009. WABI 2009 was the ninth annual conference in this series, which focuses on novel algorithms that address important problems in genomics, molecular biology, and evolution. The conference emphasizes research that describes computationally efficient algorithms and data structures that have been implemented and tested in simulations and on real data. WABI is sponsored by the European Association for Theoretical Computer Science (EATCS) and the International Society for Computational Biology (ISCB). WABI 2009 was supported by the Penn Genome Frontiers Institute and the Penn Center for Bioinformatics at the University of Pennsylvania. For the 2009 conference, 90 full papers were submitted for review by the Program Committee, and from this strong field of submissions, 34 papers were chosen for presentation at the conference and publication in the proceedings. The final program covered a wide range of topics including gene interaction networks, molecular phylogeny, RNA and protein structure, and genome evolution.

Algorithms and Computation

Space-Efficient Data Structures, Streams, and Algorithms This book constitutes the refereed proceedings of the 23rd International Symposium on Algorithms and Computation, ISAAC 2012, held in Taipei, Taiwan, in December 2012. The 68 revised full papers presented together with three invited talks were carefully reviewed and selected from 174 submissions for inclusion in the book. This volume contains topics such as graph algorithms; online and streaming algorithms; combinatorial optimization; computational complexity; computational geometry; string algorithms; approximation algorithms; graph drawing; data structures; randomized algorithms; and algorithmic game theory.

Journal of Mechanisms, Transmissions, and Automation in Design For anyone intending to work in computing, it is essential to be able both to understand and to create algorithms - they are at the heart of all programs. Without them planes would not fly, bridges would collapse and nuclear power stations would explode.
Even in more mundane situations, the correct choice of algorithm can make the
difference between a response to a query coming almost instantly, or after hours,
days or years have elapsed. Understanding Algorithms and Data Structures
provides the techniques necessary to enable readers to make an informed choice
between competing options, and to devise algorithms of their own. Written with
students on the first and second years of computing courses especially in mind,
this book has been designed as an introductory textbook for modules concerned
with algorithms and their design. It takes readers through such subjects as
Necessary Maths, Sorting, Data Structures and Abstract Data Types, and
Dynamic Programming.

IEICE Transactions on Fundamentals of Electronics, Communications and
Computer Sciences Prominent scientists present the latest achievements in
computational methods and mechanics in this book. These lectures were held at
the CMM 2009 conference.

Algorithms and Data Structures This Festschrift volume, published in honour of J.
Ian Munro, contains contributions written by some of his colleagues, former
students, and friends. In celebration of his 66th birthday the colloquium
"Conference on Space Efficient Data Structures, Streams and Algorithms" was
held in Waterloo, ON, Canada, during August 15-16, 2013. The articles presented
herein cover some of the main topics of Ian’s research interests. Together they
give a good overall perspective of the last 40 years of research in algorithms and
data structures.

The Design of Data Structures and Algorithms Christoph Lohmann introduces a
very general framework for the analysis and design of bound-preserving finite
element methods. The results of his in-depth theoretical investigations lead to
promising new extensions and modifications of existing algebraic flux correction
schemes. The main focus is on new limiting techniques designed to control the
range of solution values for advected scalar quantities or the eigenvalue range of
symmetric tensors. The author performs a detailed case study for the Folgar-
Tucker model of fiber orientation dynamics. Using eigenvalue range preserving
limiters and admissible closure approximations, he develops a physics-compatible
numerical algorithm for this model.

Algorithms and Computation The refereed proceedings of the 14th Annual
International Computing and Combinatorics Conference, COCOON 2008, held in
Dalian, China, in June 2008. The 66 revised full papers presented were carefully
reviewed and selected from 172 submissions. The papers are organized in topical
sections on algorithms and data structures, algorithmic game theory and online
algorithms, automata, languages, logic, and computability, combinatorics related
to algorithms and complexity, complexity theory, cryptography, reliability and
security, and database theory, computational biology and bioinformatics,
computational algebra, geometry, and number theory, graph drawing and
information visualization, graph theory and algorithms, communication networks, and optimization, wireless network, network optimization, and scheduling problem.

Software Engineering Education This book presents reviewed and revised papers from the fifth and sixth DIMACS Implementation Challenge workshops. These workshops, held approximately annually, aim at encouraging high-quality work in experimental analysis of data structures and algorithms. The papers published in this volume are the results of year-long coordinated research projects and contain new findings and insights. Three papers address the performance evaluation of implementations for two fundamental data structures, dictionaries and priority queues as used in the context of real applications. Another four papers consider the still evolving topic of methodologies for experimental algorithmics. Five papers are concerned with implementations of algorithms for nearest neighbor search in high dimensional spaces, an area with applications in information retrieval and data mining on collections of Web documents, DNA sequences, images and various other data types.

Combinatorial Pattern Matching Annotation This book constitutes the refereed proceedings of the 21st International Symposium on Algorithms and Computation, ISAAC 2010, held in Jeju, South Korea in December 2010. The 77 revised full papers presented were carefully reviewed and selected from 182 submissions for inclusion in the book. This volume contains topics such as approximation algorithm; complexity; data structure and algorithm; combinatorial optimization; graph algorithm; computational geometry; graph coloring; fixed parameter tractability; optimization; online algorithm; and scheduling.

Algorithms and Data Structures

Algorithms and Data Structures for External Memory This book examines for the first time, the ways that in-memory computing is changing the way businesses are run. The authors describe techniques that allow analytical and transactional processing at the speed of thought and enable new ways of doing business.

Algorithms and Data Structures This book constitutes the refereed proceedings of the 12th International Workshop on Algorithms in Bioinformatics, WABI 2012, held in Ljubljana, Slovenia, in September 2012. WABI 2012 is one of six workshops which, along with the European Symposium on Algorithms (ESA), constitute the ALGO annual meeting and focuses on algorithmic advances in bioinformatics, computational biology, and systems biology with a particular emphasis on discrete algorithms and machine-learning methods that address important problems in molecular biology. The 35 full papers presented were carefully reviewed and selected from 92 submissions. The papers include algorithms for a variety of biological problems including phylogeny, DNA and RNA sequencing and analysis, protein structure, and others.