1. Record Nr. UNINA9910483950803321

Titolo	Combinatorial Pattern Matching : 20th Annual Symposium, CPM 2009 Lille, France, June 22-24, 2009 Proceedings / / edited by Gregory Kucherov, Esko Ukkonen
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2009
ISBN	3-642-02441-6
Edizione	[1st ed. 2009.]
Descrizione fisica	1 online resource (XIII, 370 p.)
Collana	Theoretical Computer Science and General Issues, , 2512-2029 ; ; 5577
Classificazione	DAT 537f SS 4800
Altri autori (Persone)	KucherovGregory UkkonenE <1950-> (Esko)
Disciplina	004.0151
Soggetti	Computer science Pattern recognition systems Bioinformatics Algorithms Artificial intelligence - Data processing Information storage and retrieval systems Theory of Computation Automated Pattern Recognition Computational and Systems Biology Data Science Information Storage and Retrieval
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	CPM’s 20th Anniversary: A Statistical Retrospective -- Quasi-distinct Parsing and Optimal Compression Methods -- Generalized Substring Compression -- Text Indexing, Suffix Sorting, and Data Compression: Common Problems and Techniques -- Contracted Suffix Trees: A Simple and Dynamic Text Indexing Data Structure -- Linear Time Suffix Array Construction Using D-Critical Substrings -- On the Value of Multiple Read/Write Streams for Data Compression -- Reoptimization of the Shortest Common Superstring Problem -- LCS Approximation via

Embedding into Local Non-repetitive Strings -- An Efficient Matching Algorithm for Encoded DNA Sequences and Binary Strings -- Fast Searching in Packed Strings -- New Complexity Bounds for Image Matching under Rotation and Scaling -- Online Approximate Matching with Non-local Distances -- Faster and Space-Optimal Edit Distance “1” Dictionary -- Approximate Matching for Run-Length Encoded Strings Is 3sum-Hard -- Modeling and Algorithmic Challenges in Online Social Networks -- Permuted Longest-Common-Prefix Array -- Periodic String Comparison -- Deconstructing Intractability: A Case Study for Interval Constrained Coloring -- Maximum Motif Problem in Vertex-Colored Graphs -- Fast RNA Structure Alignment for Crossing Input Structures -- Sparse RNA Folding: Time and Space Efficient Algorithms -- Multiple Alignment of Biological Networks: A Flexible Approach -- Graph Mining: Patterns, Generators and Tools -- Level-k Phylogenetic Networks Are Constructable from a Dense Triplet Set in Polynomial Time -- The Structure of Level-k Phylogenetic Networks -- Finding All Sorting Tandem Duplication Random Loss Operations -- Average-Case Analysis of Perfect Sorting by Reversals -- Statistical Properties of Factor Oracles -- Haplotype Inference Constrained by Plausible HaplotypeData -- Efficient Inference of Haplotypes from Genotypes on a Pedigree with Mutations and Missing Alleles (Extented Abstract).

Sommario/riassunto

It is our great pleasure to introduce the proceedings of the 20th anniversary edition of the Annual Symposium on Combinatorial Pattern Matching (CPM). The meeting was held in Lille, France,hosted by the Laboratoired'Informatique Fondamentale de Lille (LIFL) a'liated with the Universit´ e de Lille 1 and the French Centre National de Recherche Scienti'que (CNRS), as well as by INRIA Lille - Nord Europe. Started in 1990as a summer school with about 30 invited participants, CPM quicklyevolvedintoarepresentativeannualinternationalconference. Principally motivated by combinatorial algorithms for search problems in strings (texts, sequences), the scope of CPM extended to more complex data structures such astrees,graphs,two-dimensionalarrays,or setsof points.Thosestudiesresulted inarichcollectionofalgorithmictechniquesanddatastructures, makingbridges to other parts of the theory of discrete algorithms and algorithm engineering. Today, the area of combinatorial pattern matching is a well-identi'ed active sub'eld of algorithmic research. Importantly, this development has been fertilized by a number of major - plication areas providing direct motivations and fruitful feedback to the CPM problematics. Those applications include data compression, computational bi- ogy,Internetsearch,datamining,informationretrieval, coding,naturallanguage processing,pattern recognition,music analysis, and others. On the one hand, all these areas make use of combinatorial pattern matching techniques and, on the otherhand, raisenewpatternmatchingproblems.Forexample,the fastprogress in computational molecular biology, triggered in the 1990s by the availability of mass genomic data, considerably in'uenced the combinatorial pattern matching ?eld: as an illustration, about one-third of the papers presented in this volume deal with problems related to bioinformatics applications.