

1. Record Nr.	UNINA9910784735803321
Autore	Crochemore Maxime <1947->
Titolo	Jewels of stringology [[electronic resource] /] / Maxime Crochemore, Wojciech Rytter
Pubbl/distr/stampa	Singapore ; ; River Edge, NJ, : World Scientific, 2002
ISBN	981-277-822-5
Descrizione fisica	x, 310 p. : ill
Altri autori (Persone)	RytterWojciech
Disciplina	005.1
Soggetti	Computer algorithms Matching theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliography references and index.
Nota di contenuto	1. Stringology. 1.1. Text file facilities. 1.2. Dictionaries. 1.3. Data compression. 1.4. Applications of text algorithms in genetics. 1.5. Efficiency of algorithms. 1.6. Some notation and formal definitions. 1.7. Some simple combinatorics of strings. 1.8. Some other interesting strings. 1.9. Cyclic shifts and primitive words -- 2. Basic string searching algorithms. 2.1. Knuth-Morris-Pratt algorithm. 2.2. Boyer-Moore algorithm and its variations -- 3. Preprocessing for basic searchings. 3.1. Preprocessing patterns for MP and KMP algorithms. 3.2. Table of prefixes. 3.3. Preprocessing for Boyer-Moore algorithm. 3.4. * Analysis of Boyer-Moore algorithm -- 4. On-line construction of suffix trees. 4.1. Tries and their compact versions. 4.2. Prelude to Ukkonen algorithm. 4.3. Ukkonen algorithm -- 5. More on suffix trees. 5.1. Several applications of suffix trees. 5.2. McCreight algorithm -- 6. Subword graphs. 6.1. Directed acyclic graph. 6.2. On-line construction of subword graphs. 6.3. The reverse perspective. 6.4. Compact subword graphs -- 7. Text algorithms related to sorting. 7.1. The naming technique: KMR algorithm. 7.2. Two-dimensional KMR algorithm. 7.3. Suffix arrays. 7.4. Constructing suffix trees by sorting. 7.5. The Lowest-Common-Anccestor dictionary. 7.6. Suffix-Merge-Sort -- 8. Symmetries and repetitions in texts. 8.1. Searching for symmetric words. 8.2. Compositions of symmetric words. 8.3. Searching for square factors -- 9. Constant-space searchings. 9.1. Constant-space matching for easy patterns. 9.2. MaxSuffix-matching. 9.3. Computation

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Sommario/riassunto

The term "stringology" is a popular nickname for text algorithms, or algorithms on strings. This book deals with the most basic algorithms in the area. Most of them can be viewed as "algorithmic jewels" and deserve reader-friendly presentation. One of the main aims of the book is to present several of the most celebrated algorithms in a simple way by omitting obscuring details and separating algorithmic structure from combinatorial theoretical background. The book reflects the relationships between applications of text-algorithmic techniques and the classification of algorithms according to the measures of complexity considered. The text can be viewed as a parade of algorithms in which the main purpose is to discuss the foundations of the algorithms and their interconnections. One can partition the algorithmic problems discussed into practical and theoretical problems. Certainly, string matching and data compression are in the former class, while most problems related to symmetries and repetitions in texts are in the latter. However, all the problems are interesting from an algorithmic point of view and enable the reader to appreciate the importance of combinatorics on words as a tool in the design of efficient text algorithms. In most textbooks on algorithms and data structures, the presentation of efficient algorithms on words is quite short as compared to issues in graph theory, sorting, searching, and some other areas. At the same time, there are many presentations of interesting algorithms on words accessible only in journals and in a form directed mainly at specialists. This book fills the gap in the book literature on algorithms on words, and brings together the many results presently dispersed in the masses of journal articles. The presentation is reader-friendly; many examples and about two hundred figures illustrate nicely the behaviour of otherwise very complex algorithms.
