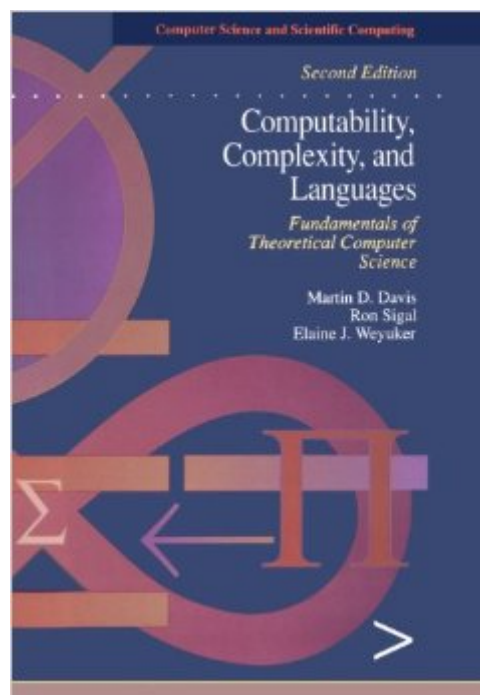


The book was found

# Computability, Complexity, And Languages, Second Edition: Fundamentals Of Theoretical Computer Science (Computer Science And Scientific Computing)



## Synopsis

This introductory text covers the key areas of computer science, including recursive function theory, formal languages, and automata. It assumes a minimal background in formal mathematics. The book is divided into five parts: Computability, Grammars and Automata, Logic, Complexity, and Unsolvability. \* Computability theory is introduced in a manner that makes maximum use of previous programming experience, including a "universal" program that takes up less than a page.\* The number of exercises included has more than tripled.\* Automata theory, computational logic, and complexity theory are presented in a flexible manner, and can be covered in a variety of different arrangements.

## Book Information

Series: Computer Science and Scientific Computing

Hardcover: 609 pages

Publisher: Morgan Kaufmann; 2 edition (February 17, 1994)

Language: English

ISBN-10: 0122063821

ISBN-13: 978-0122063824

Product Dimensions: 6.1 x 1.4 x 9.2 inches

Shipping Weight: 2.2 pounds (View shipping rates and policies)

Average Customer Review: 4.9 out of 5 starsÂ Â See all reviewsÂ (7 customer reviews)

Best Sellers Rank: #419,853 in Books (See Top 100 in Books) #136 inÂ Books > Computers & Technology > Computer Science > Information Theory #156 inÂ Books > Science & Math > Mathematics > Pure Mathematics > Discrete Mathematics #213 inÂ Books > Science & Math > Mathematics > Pure Mathematics > Logic

## Customer Reviews

The authors of this book define theoretical computer science as the mathematical study of models of computation, and they do an excellent job of detailing the major results in the theory of computation as related to mathematical logic. Mathematicians, programmers, and philosophers will find the book an effective one in which to learn computability theory, and it serves well as a textbook for courses in the subject. After a brief review of elementary mathematics and mathematical logic in chapter 1, the authors move right into the consideration of computable functions in chapter 2. They choose a particular abstract programming language in which to study the computability theory, which is built from variables, and programs that can be built from lists of instructions. Examples of

programs are given, which have a Fortran flavor, with examples of computing partial functions. Unfortunately, a plethora of GOTO statements appear in the programs, and throughout the rest of the book, which is surprising given the publishing date. The use of these GOTO statements in the book is a major annoyance. Then in chapter 3, the authors discuss primitive recursive functions, beginning with a treatment of composition, followed by the all-important concept of recursion. The class (PRC) of primitive recursive functions is introduced, and shown to be computable. The primitive recursive predicates are introduced, followed by a proof that the existential and universal quantifiers over an element of a PRC class are also PRC. This is followed by a discussion of minimalization and Godel numbers. The next chapter is very interesting, wherein the famous halting problem is discussed and related to Church's thesis.

[Download to continue reading...](#)

Computability, Complexity, and Languages, Second Edition: Fundamentals of Theoretical Computer Science (Computer Science and Scientific Computing) The Theory of Matrices, Second Edition: With Applications (Computer Science and Scientific Computing) Elementary Linear Programming with Applications, Second Edition (Computer Science & Scientific Computing Series) Complexity Explained (Springer Complexity) Dynamics, Information and Complexity in Quantum Systems (Theoretical and Mathematical Physics) The Nature of Theoretical Thinking in Nursing: Third Edition (Kim, The Nature of Theoretical Thinking in Nursing) Philosophical And Theoretical Perspectives For Advanced Nursing Practice (Cody, Philosophical and Theoretical Perspectives for Advances Nursing Practice) Quantum Mechanics: The Theoretical Minimum (Theoretical Minimum, The) Real Computing Made Real: Preventing Errors in Scientific and Engineering Calculations (Dover Books on Computer Science) The Recursive Universe: Cosmic Complexity and the Limits of Scientific Knowledge Computer Processing of Oriental Languages. Beyond the Orient: The Research Challenges Ahead: 21st International Conference, ICCPOL 2006, Singapore, ... (Lecture Notes in Computer Science) Forensic Science: An Introduction to Scientific and Investigative Techniques, Third Edition (Forensic Science: An Introduction to Scientific & Investigative Techniques) Programming: Learn the Fundamentals of Computer Programming Languages (Swift, C++, C#, Java, Coding, Python, Hacking, programming tutorials) Scientific Computing with MATLAB and Octave (Texts in Computational Science and Engineering) GPU Computing Gems Emerald Edition (Applications of GPU Computing Series) HACKING: Beginner's Crash Course - Essential Guide to Practical: Computer Hacking, Hacking for Beginners, & Penetration Testing (Computer Systems, Computer Programming, Computer Science Book 1) Student Solutions Manual for Differential Equations: Computing and Modeling and Differential Equations and Boundary Value Problems:

Computing and Modeling An Introduction to Data Structures and Algorithms (Progress in Theoretical Computer Science) Randomization Methods in Algorithm Design: Dimacs Workshop, December 12-14, 1997 (Dimacs Series in Discrete Mathematics and Theoretical Computer Science) Languages and Machines: An Introduction to the Theory of Computer Science (3rd Edition)

[Dmca](#)