Wonderful Computer Science Books

Every subfield of Computer Science has several journals, dozens of text books, and hundreds of technical books. The web makes this situation much worse by providing course notes and technical discussion from hundreds or thousands of practitioners. Below is the single best book or two (IMHO) in most of areas covered in this class.

Data Structures, Algorithms and Programming

H. Abelson and G.J. Sussman (1996)
Structure and Interpretation of Computer Programs, Second Edition
McGraw-Hill. ISBN 0-07-000484-6

Comprehensive Reference on Algorithms

T.H. Cormen, C.E. Leiserson, and R.L. Rivest (1990)
Introduction to Algorithms
MIT Press. ISBN 0-07-013143-0

Very High-level Programming

S. Wolfram (1996)
The Mathematica Book, Third Edition
Wolfram Media, Cambridge U. Press. ISBN 0-521-58889-8

Mathematical Models of Data Structures

Z. Manna and R. Waldinger (1985)
The Logical Basis for Computer Programming, Volume 1
Addison-Wesley. ISBN 0-201-18260-2

Old-style Procedural Algorithms

R. Sedgewick (1988)
Algorithms in C++, Third Edition
Addison-Wesley. ISBN 0-201-35088-2

Theory of Computation Complexity

J.E. Savage (1998)
Models of Computation
Addison-Wesley. ISBN 0-201-89539-0

Programming Theory

N.D. Jones (1997)
Computability and Complexity from a Programming Perspective
MIT Press. ISBN 0-262-10064-9

Philosophy of Computation

B.C. Smith (1996)
On the Origin of Objects
MIT Press.   ISBN   0-262-69209-0

Programming   Languages

B.J. MacLennan (1999)
Principles of Programming Languages, Third Edition
Oxford.   ISBN 0-19-511306-3

M.L. Scott (2000)
Programming Language Pragmatics
Morgan-Kauffman.   ISBN   1-55860-442-1

Computer   Architecture

J.L. Hennessy and D.A. Patterson (1996)
Computer Architecture: A Quantitative Approach, Second Edition
Morgan-Kaufmann.   ISBN   1-55860-329-8

Compilers

S.S. Muchnick (1997)
Advanced Compiler Design and Implementation
Morgan-Kaufmann.   ISBN 1-55860-320-4

Discrete   Mathematics

W.K. Grassmann and J. Tremblay (1996)
Logic and Discrete Mathematics: A Computer Science Perspective
Prentice-Hall.   ISBN   0-13-501206-6

Understanding Computing in Simple Language

R. P. Feynman (A.J.G. Hey and R.W. Allen, eds) (1996)
Feynman Lectures on Computation
Addison-Wesley. ISBN   0-201-48991-0

Computer Science Culture

ACM Turing Award Lectures: The First Twenty Years (1987)
ACM Press, Addison-Wesley.   ISBN 0-201-07794-9

Seminal Algorithms Text (recently updated!)

D.E. Knuth (1997, 1997, 1998)
Fundamental Algorithms, Third Edition, volume 1 of *The Art of Computer Programming*
Seminumerical Algorithms, Third Edition, v. 2 of *The Art of Computer Programming*
Sorting and Searching, Third Edition, v. 3 of *The Art of Computer Programming*
Addison-Wesley, ISBNS 0-201-89683-4, 0-201-89684-2, 0-201-89685-0

Undergraduate Introduction to Data Structures and Algorithms

F.M. Carrano, P. Helman and R. Veroff (1998)
Data Abstraction and Problem Solving with C++
Addison-Wesley.   ISBN   0-201-87402-4

Mark Allen Weiss (1998)
Data Structures and Problem Solving Using JAVA
Addison-Wesley   ISBN   0-201-54991-3

Historical First Textbooks

Nicklaus Wirth   (1976)
Algorithms + Data Structures = Programs
Prentice-Hall   ISBN   0-13-022418-9

A.V. AHo, J.E. Hopcroft and J.D. Ullman (1983)
Data Structures and Algorithms
Addison-Wesley   ISBN   0-201-00023-7

Computer Art

A.M. Spalter (1999)
The Computer in the Visual Arts
Addison-Wesley.   ISBN   0-201-38600-3