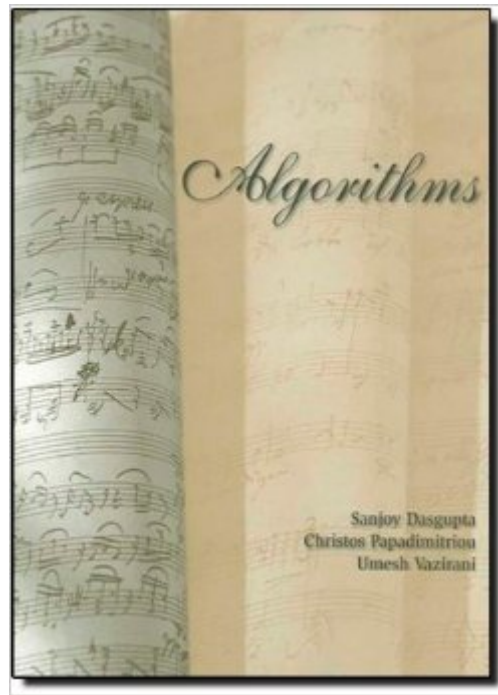


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# Algorithms



## Synopsis

This text, extensively class-tested over a decade at UC Berkeley and UC San Diego, explains the fundamentals of algorithms in a story line that makes the material enjoyable and easy to digest. Emphasis is placed on understanding the crisp mathematical idea behind each algorithm, in a manner that is intuitive and rigorous without being unduly formal. Features include: The use of boxes to strengthen the narrative: pieces that provide historical context, descriptions of how the algorithms are used in practice, and excursions for the mathematically sophisticated. Carefully chosen advanced topics that can be skipped in a standard one-semester course, but can be covered in an advanced algorithms course or in a more leisurely two-semester sequence. An accessible treatment of linear programming introduces students to one of the greatest achievements in algorithms. An optional chapter on the quantum algorithm for factoring provides a unique peephole into this exciting topic. In addition to the text, DasGupta also offers a Solutions Manual, which is available on the Online Learning Center. "Algorithms is an outstanding undergraduate text, equally informed by the historical roots and contemporary applications of its subject. Like a captivating novel, it is a joy to read." Tim Roughgarden Stanford University

## Book Information

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## Customer Reviews

The entire book is available in PDF on Vazirani's website here: [...]The website says "draft" but it's the same or better (errata corrected) than the print version. (I accidentally bought the print version even though I knew about the PDF. At least I was able to resell it for [...])I used this book for CSE 101 Design and Analysis of Algorithms at UCSD. It's OK, but the level of detail of algorithms was

too low for me to use just this book. I sometimes had to reference Wikipedia and other publications to achieve complete understanding.

As a professor in a state university, I learn, teach, and research on computer algorithms. Not many computer books are a joy to read, but this one is exceptional: It is concise, informative, and inspiring. I don't know since when computer books are synonymous to boring, lengthy piles of printed papers filled with screen dumps. Truly innovative books are rare. Not only does this book explain algorithms clearly, it also tells the stories behind them. I would consider this book a good complement rather than a substitution to Corman et al's book Introduction to Algorithms (which is one of the most widely used textbook for algorithm course). If you just want to find a book where you can translate the pseudo code into a program, this is not for you. The focus of this book is to explain and to inspire (which is also what I believe the real "Education" should be) rather than dumping the students' head with codes and rules. I would also like to mention that the book "the design and analysis of algorithms" is also a good one. It is good for most colleges at undergraduate level except for a few "top-level" universities.

More concise than Introduction to Algorithms, certainly, but not better. I often feel that the explanations given in Algorithms are much harder to grasp than those in the CLRS book. Partly, this is due to fewer pages devoted to each concept, and fewer concepts overall (leading to a spottier understanding of the field and the relations between concepts.) However, this is also partly due to what I feel is a more confusing writing and teaching style by the authors of Algorithms. Algorithms was the assigned text in a class here at UC Berkeley, and I feel I would have been very confused if I did not have CLRS to cross-reference and explain things more clearly, and in more detail. This text isn't bad, per se, but there are definitely better options. I've taken the class with Christos Papadimitriou, and even he has said that everyone should own CLRS. Given that, I'm not sure what purpose this text serves. Is brevity actually better if you end up spending more time trying to understand things?

Algorithms is a complex topic in computing that needs tentative learning. The authors of this book really succeeded in making learning algorithms more enjoyable, interesting, and easy yet comprehensive and advanced. This is a difficult equation, but this book really achieves it. It takes you from the early foundation with the Fibonacci algorithm till the complex graph algorithms while explaining each milestone all over the way. The way they present this subject is in a story manner or

a casual discussion between two computing professionals which makes the book interactive, easy to access, and comprehensive. I recommend this book for both beginner and advanced readers in the field of computing.

A good text. Structured very nicely with lots of appropriate background that builds up the story and derivation of the algorithms. A bit too terse in places, leaving someone without a teacher hard-pressed to implement their efficient "selection" algorithm for medians or other percentiles into data sets, for instance. This situation happens a few critical times in the text. Although the coverage is good for the price and size of this volume, it really does lack in the amount of pseudocode listings as well. So, overall, good text on a budget and with a good professor, but kind of useless as a reference. Get the MIT press algorithms book if you need a reference text.

I occasionally teach algorithms at CU Boulder to our undergraduates. This book accomplishes what it set out to do: provide a comprehensible (but not comprehensive) treatment of a core piece of Computer Science at an affordable cost. That we get one of the greatest researchers in the area (Papadimitriou) alongside two other distinguished authors is just icing on the cake. The first printing had numerous errors, though the online version of the book had already corrected many of them. I haven't used the book since then, but will in the Fall, and I'd expect with the vigor already invested by the authors, the book will be in even better shape. I'm glad they wrote this thing.. it was long overdue.

This is one of the best introductory text on algorithms I've ever read. The concepts are presented clearly, the writing style is lucid, and whole book is very easy to follow. It emphasizes the ideas and insightful hints behind every algorithms, rather than the overly rigorous mathematic proofs often found in other books. The book also includes a lot of exercises, as a complementary to the content. The side bars also provide a lot of interesting information.

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