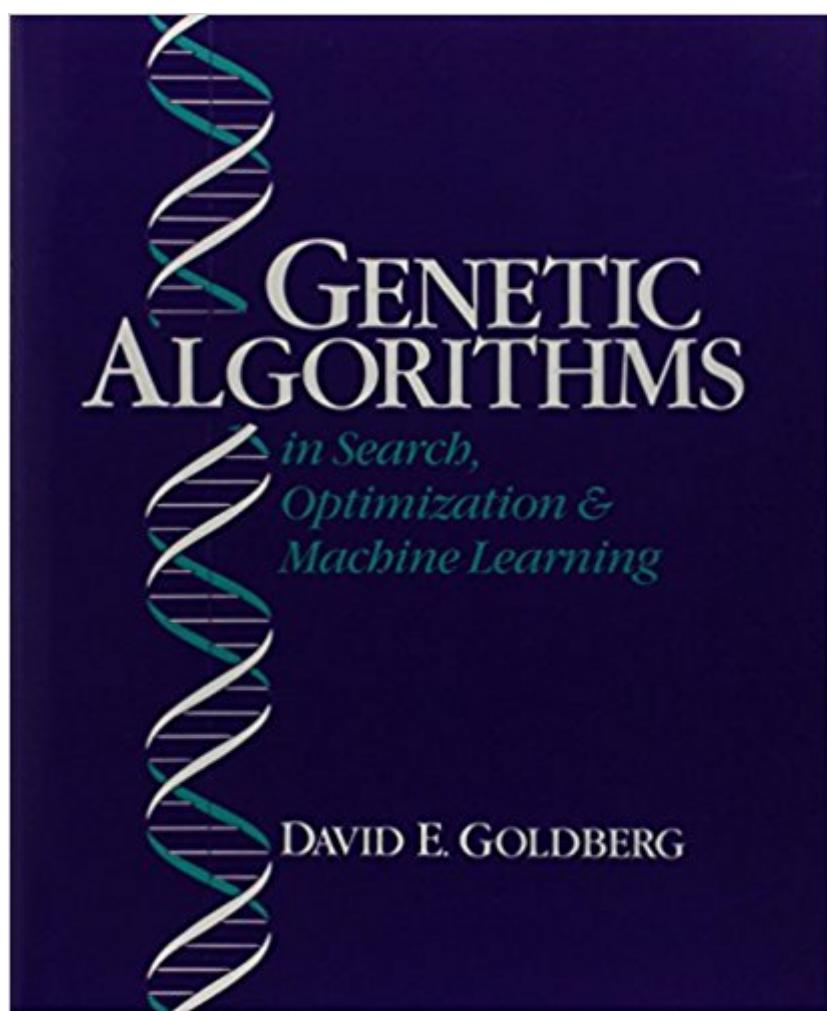


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# Genetic Algorithms In Search, Optimization, And Machine Learning



## **Synopsis**

This book describes the theory, operation, and application of genetic algorithms-search algorithms based on the mechanics of natural selection and genetics.

## **Book Information**

Hardcover: 432 pages

Publisher: Addison-Wesley Professional; 1 edition (January 11, 1989)

Language: English

ISBN-10: 0201157675

ISBN-13: 978-0201157673

Product Dimensions: 7.8 x 0.8 x 9.5 inches

Shipping Weight: 1.9 pounds

Average Customer Review: 4.2 out of 5 stars 24 customer reviews

Best Sellers Rank: #396,600 in Books (See Top 100 in Books) #4 in Books > Computers & Technology > Programming > Algorithms > Genetic #78 in Books > Computers & Technology > Computer Science > AI & Machine Learning > Machine Theory #111 in Books > Textbooks > Computer Science > Algorithms

## **Customer Reviews**

David Goldberg's Genetic Algorithms in Search, Optimization and Machine Learning is by far the bestselling introduction to genetic algorithms. Goldberg is one of the preeminent researchers in the field--he has published over 100 research articles on genetic algorithms and is a student of John Holland, the father of genetic algorithms--and his deep understanding of the material shines through. The book contains a complete listing of a simple genetic algorithm in Pascal, which C programmers can easily understand. The book covers all of the important topics in the field, including crossover, mutation, classifier systems, and fitness scaling, giving a novice with a computer science background enough information to implement a genetic algorithm and describe genetic algorithms to a friend.

This book brings together - in an informal and tutorial fashion - the computer techniques, mathematical tools, and research results that will enable both students and practitioners to apply genetic algorithms to problems in many fields. Major concepts are illustrated with running examples, and major algorithms are illustrated by Pascal computer programs. No prior knowledge of GAs or genetics is assumed, and only a minimum of computer programming and mathematics

background is required. 0201157675B07092001

I took an AI class and bought this. The professor is very old-school and still uses overhead projectors and hands out paper notes instead of something like PDF. The book is definitely dated here in 2013, but the ideas presented therein are valid. I would look elsewhere for a modern genetic algorithms book, though. Unless your professor is old-school and has textbooks older than you are. The code examples are largely irrelevant: nobody uses Pascal anymore, not even for teaching. So if you want to play along and run the code you either need to locate an old 386 and CRT monitor, or translate the code into something that actually runs in this century.

I was looking for an automated approach to finding an optimum run sequence through a changeover matrix. The programming examples gave me the elements I needed to experiment and then fine tune the approach for a working search algorithm. I found the book a good companion in my "voyage of discovery". For me, the book works two levels, the basic pieces to "play with" are presented clearly in chapters 1 and 3, and practical implementation suggestions are spread throughout the text. By developing programs in Visual Basic, experimenting with search parameters and re-reading sections of this book - I learned something new!

This book absolutely delivers more than I ever wanted to know about genetic algorithms. Worth it just for the first few chapters.

## THANK YOU

I agree with another reviewer who said the book was unnecessarily long. Genetic Algorithms are a great programming tool, and there are some tips and tricks that can help your programs converge faster and more accurately, but this book had a lot of redundant information. If you are interested in using GA for solution-finding, I doubt you'll find much useful in this book beyond the first chapter or so. Many of the examples later in the book were so specific that I couldn't see how they could be usefully generalized. Really optimizing a GA approach for a specific problem domain takes a fair amount of tuning, and this book won't help much with that. I think time spent surfing siteseek or other publication sites would be better spent than reading this book.

I' satified; I' knew this book in your sitlt arrived at many time agoltis a interesting and serious book

This is a great book to begin your journey on Genetic Algorithms (GA). The author is a pioneering authority on the subject and has explained the basics of a GA in a very gentle and easy to understand manner. The book has a great variety of specific but diverse examples, which may not be useful at first glance, but gives an insight to where all the technique has been applied! However, some aspects of the book perhaps need an edition, like the more recent advances in GA operators, specifics of chromosomal representation schemes, non-linear optimization functions, etc. I have read several, well written books on the subject, but this one has a very distinct and sometimes interesting style of writing! The best would be to quickly read this one to get a fairly good understanding of the basics and then take up a recent book that addresses other aspects like Mitchell's book, for example. Having said that, I think the book is a great and inspiring start to using genetic algorithms.

This book gives a good introduction to genetic algorithms for a general undergraduate audience. However, it is important to note that it does not cover Evolutionary Strategies, an approach to evolutionary computing that I have found quite useful since it is specifically designed for Euclidean space optimization problems where many if not most interesting optimization problems are formulated in (take for example the problem of determining the weights of a neural network that minimizes the network's overall classification error). Nor does it cover evolutionary programming (not to be confused with genetic programming). So after reading this book, I recommend (for the mathematically adventurous) Thomas Back's "Evolutionary Algorithms in Theory and Practice: Evolution Strategies, Evolutionary Programming, Genetic Algorithms" ISBN: 0195099710 Happy reading and enjoy the fascinating world of evolutionary computation!

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