Algorithms To Live By: The Computer Science Of Human Decisions

Algorithms
to Live By

The
COMPUTER SCIENCE
of
HUMAN DECISIONS
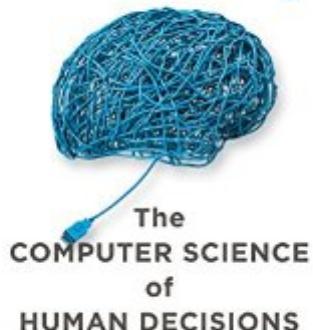
Brian Christian and Tom Griffiths

Synopsis

A fascinating exploration of how computer algorithms can be applied to our everyday lives, helping to solve common decision-making problems and illuminate the workings of the human mind. All our lives are constrained by limited space and time, limits that give rise to a particular set of problems. What should we do, or leave undone, in a day or a lifetime? How much messiness should we accept? What balance of new activities and familiar favorites is the most fulfilling? These may seem like uniquely human quandaries, but they are not: computers, too, face the same constraints, so computer scientists have been grappling with their version of such problems for decades. And the solutions they've found have much to teach us. In a dazzlingly interdisciplinary work, acclaimed author Brian Christian and cognitive scientist Tom Griffiths show how the simple, precise algorithms used by computers can also untangle very human questions. They explain how to have better hunches and when to leave things to chance, how to deal with overwhelming choices and how best to connect with others. From finding a spouse to finding a parking spot, from organizing one's inbox to understanding the workings of human memory, Algorithms to Live By transforms the wisdom of computer science into strategies for human living.

Book Information

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Customer Reviews

I'm a little over halfway with this recently published book, which I'm really enjoying so far - and I expect to enjoy it all the way to the end. A lot of great and unexpected insights here, and it seems that the authors did a good job explaining extremely complex algorithms and showing their applicability to real life (though it's hard for me to tell how good their explanations are to a novice,

since I'm an expert in the field - I have two masters in Computer Science and working on my PhD, and was familiar with 90% of the algorithms described before opening the book).My biggest quibble with this book (and the reason they lost a star) is that I noticed a few annoying/sloppy inaccuracies, which makes me ever so slightly doubt the accuracy and veracity of other areas of the book that I'm less familiar with. The other issue is the boldness of their (otherwise very interesting) conjectures.For example, the authors misunderstand and misquote the 2-minute rule from David Allen's Getting Things Done, claiming the rule tells you to perform any less than 2-min task immediately when it occurs to you - and essentially simplifying the entire GTD system into the 2-min rule, which is in fact a tiny part of GTD (pg. 105-106). In fact, however, Allen does not suggest that at all - that would distract you from whatever you're currently engaged with, i.e. require a context switch (the costs of which the authors discuss at length). Instead, you should write that task down and add it to your intray, just like any other task. The 2-minute rule is applied later, while clearing your intray (which can be anytime in the next 48 hours). The point of the 2-minute rule is that the time spent on adding this task into your otherwise-extremely-flexible GTD system, and then tracking it in said system, would take longer than two minutes. This type of tracking is akin to what the authors refer to as "meta-work", and thus performing the 2-min task at inbox clearing time saves you an equal or greater amount of meta-work later. This is completely in line with the type of scheduling suggestions that the authors discuss. I'm not familiar with the other popular advice books the authors quote in the scheduling chapter or in the others chapters (e.g. the empty-your-closet type books they discuss in chapter 4), so I don't know if there are other such mischaracterizations, but it makes me suspect there might be. And I get that they're trying to differentiate their own advice from "all the other pop books out there", but if they're going to explicitly cite other books, they should try not to misrepresent them.Also, when discussing the Gittins rule and the multi-armed bandit problem, they say that a machine with a 0-0 record has "a Gittins index of 0.7029. In other words, something you have no experience with whatsoever is more attractive than a machine that you know pays out seven times out of ten!" (pg. 40). However, their own table on the same page clearly shows that a machine with a 7-3 record has a Gittins index of 0.7187, making such a machine ever so slightly superior to a 0-0 one. After some more reading I realized that what they meant was that a machine with a 0-0 record and *uncertainty* is better than a *certain payout* of 70% (i.e. guaranteed to payout 7 out of 10), but that was not what the text implied.To be clear, these inaccuracies in and of themselves aren't huge - but they planted a seed of doubt in my mind as to whether there were other such misrepresentations or inaccuracies in the book that I simply hadn't caught, and detracted from my enjoyment of the book.The other concern I have with this book is that several chapters end

with provocative suggestions that aren't actually empirically-backed. These conjectures are cool, but I'd have liked to see scientists be more careful about making such bold claims, or at least couching them in the need for more research to establish whether they were entirely true. One example here was the discussion about the decline of aging supposedly being a result of simply having a larger history to remember (pgs 103-104). This is a fascinating conjecture, and one that deserves to be studied properly, but they are basing it on some research work that was not age-related. I suspect the authors may be on to something, at least in the context of "normal aging" cognitive decline as opposed to, say, alzheimer-related decline. However, as stated in the text, the conjectures are stated a bit too strongly for my tastes ("But as you age, and begin to experience these sporadic latencies, take heart: the length of the delay is partly an indicator of the extent of your experience.", pg 104). I'd hate to see anyone making decisions based on them - potentially missing an earlier diagnosis, say, of alzheimer's, because the authors claimed that cognitive decline is totally normal.Quibbles and concerns notwithstanding, I'm definitely enjoying the book and I think it's a great addition to the new genre of what's being called by some "science-help". It's also a good read for people who are tired of the same-old, and thirsty for some advice that's off the beaten path.UPDATE:The rest of the book was as good as I expected.Additionally, I sent this review to the lead author (Brian Christian) in case he wanted to address these issues. I was delighted to receive a very thoughtful response from him! They will be fixing the Gittens rule description in the paperback edition, to make it clearer to the reader. The author respectfully disagreed with me on the other two issues (GTD 2 minute rule & cognitive decline).Given what I saw in the email, I'd say the intentions behind the book definitely merit 5 stars (even though I still disagree on their presentation of those two topics). However, I'll leave the original title & rating of 4 stars as it stands for the original hardcover edition, and for consistency's sake. As I originally said, the book stands as an excellent addition to the genre, and also likely as a great first exposure into Computer Science if you've never had any.

The most thoughtful and meaningful book I have read since Daniel Kahneman's "Thinking Fast and Slow". It extends that work by detailing the extensive computer science research that has been done which illuminates those techniques (i.e., algorithms) that support our brain's natural capabilities in order to make the best possible life decisions. It shows when it pays to be precise and rigorous and when the best choices can be made by less stringent analyses. And where "winging it" or 'using gut feelings' may indeed produce the best results. The authors accomplish these valuable lessons through clear

explanatory writing, pertinent examples drawn from both computer design and the real (human) world and a fine sense of humor.In addition to wonderfully fulfilling its stated goal the book also provides the reader with a solid overview of the current state of computer design and architecture and some strong validations of the received wisdom that has come to us from philosophy and religion.

What an amazing book. I am anon-CS major data scientists with a masters in stats/machine learning. Although I have been a C/C++ programmer for 8 years, I have always lamented not having a formal education in CS data structures and algorithms, time/space complexity topics. This book is by far the most effective in teaching me CS algorithms. With real life examples, this books teaches the "philosophy" behind scheduling, sorting, searching and many other algorithms. Thank you authors. This is the exact book I needed to learn algorithms. Amazing, amazing!I always leave reviews only if I am bowled over by the product. This book has surpassed my expectations

This is one of the best accessible pop-science books I have read in a long time! The partnership between the two authors (Brian Christian and Tom Griffiths) is amazing. Too often books on interesting scientific topics are written either written by scientists alone who are not good at explaining their fields to a general audience or authors who, being less versed in the field, make inaccurate/overgeneralized claims or even just miss interesting connections that an expert would be able to include. Algorithms to Live By gets the best of both worlds, Tom Griffiths is an undisputed leader in his field and Brian Christian is a master of translating scientific jargon to human-language. This book walks you through decision theory in a way that is both engaging and enriching. I can strongly recommend that you buy this book (I will probably be purchasing several more copies to give as gifts)

I am a computer science professor and have taught the undergraduate algorithms course at my university for the last several years so most of this material was not completely new to me.But I still learned quite a lot, especially in the first couple of chapters dealing with the secretary problem and the explore-exploit trade-off (multi-armed bandits) which are both very popular topics but far from my areas of expertise.What I particularly liked was how the authors take care to explain how these seemingly abstruse algorithmic questions have implications for our daily lives and how we can use algorithms to figure out better ways of doing seemingly mundane tasks.I think the perfect audience for this book is a bright high school or college student who has not heard of most of these topics but

has an affinity for math and computer science. The material here serves as excellent motivation and could certainly make them want to delve much deeper into a specific area.

A really remarkable tour of the (a) deceptively simple answers to difficult problems, and (b) deceptively difficult answers to seemingly simple problems. A great book for anyone interested in decision making.

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