

Book Review

Christian, Brian, and Griffiths, Tom. (2016). *Algorithms to live by: The computer science of human decisions*. Allen Lane. Toronto, Ontario.

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Every chapter in *Algorithms to live by* is organized around a computer science problem with a real-world equivalent. That's to say, the basic structure of the problem is the same, whether it's in a virtual or a real-world environment. Consequently, so the thinking goes, we can solve real-world problems by applying the same algorithms that computer scientists have used to solve virtual problems.

In a virtual environment these problems have technical names - Explore/Exploit, Caching, Context Switch, Overfitting – but they are problems we are all familiar with. Problems like, 'How can I live a life free of regret?' 'How can I be more organized?' 'How can I stop procrastinating?' and 'How can I reach my full potential?'

So what can computers teach us about ourselves and about life?

- **Manage your distractions or pay the price.** Computers, just like humans, pay a price when they switch tasks, as the 'metawork' of putting everything away that is relevant to one task and pulling up everything that is relevant to another task takes time and resources. In its extreme this metawork takes up all the system's resources, rendering it completely incapable of doing any real work at all. This situation is known as 'thrashing.'

If you've ever had a day so full of interruptions that at the end of it you thought, 'What did I even get done today?' it's likely you suffered from the human equivalent of 'thrashing.' Computer scientists have come up with a range of strategies to deal with this problem, including getting the system to say 'No' to new tasks, or simply getting on and

doing something – anything – randomly. So the next time you're feeling like you're not getting anything useful done, ask yourself what you can say 'no' to, or just start doing something – anything!

- **Over-reliance on data is a dangerous thing.** Data is rarely as reliable as we would like it to be, and the data we *do* have is almost never adequate to the purpose we put it to. Thus, unless you have “all the facts, they're free of error and uncertainty, and you can directly assess whatever is important to you” (p. 167) (which is almost never the case) you're better off using data as a rough guide, not as a god.
- **Keep it simple.** Some problems are hard even for computers to solve. Because speed is often more important than accuracy, computer scientists use a technique called Constraint Relaxation to remove one or more components of a problem. The human equivalent of this is when we ask questions like “What would you do if you weren't afraid?” or “What would you do if you won the lottery?” These questions remove the constraints of fear and money respectively, making the problem easier to solve.
- **Guessing is OK.** Recent work in computer science has shown that random answers to complex questions may be just as good as more 'rational' answers. So the next time you have a client that says “I don't know,” make them guess. At least then you'll have an answer. And it may be just as good – or better – as the answer they'd have after ten years thinking about it.
- **Regret is avoidable.** Although it may not be possible to live a life free of regret, it *is* possible to live a life with *minimal* regret if you adopt an attitude of “optimism in the face of uncertainty” (p. 45). This attitude allows you (and computers) to optimally balance exploration of the unknown with exploitation of the known.
- **A messy desk may be the best way of organizing your papers.** Efficient computer systems organize their files according to the principle of Least Recently Used Eviction. This principle assumes that the best predictor of what you want next is what you used most recently, and, inversely, that what you are least likely to want next is what you used least recently. Most messy desks are organized according to this same principle – documents used most recently are on top, while documents used least recently are on the bottom. So, despite appearances, you're most likely to find what you want, when you want it, when you have a messy desk.

Most people don't like the idea that we can learn about ourselves and about life from computers; they think we'll end up as coldly rational Dr. Spock-like automatons if we do. But computer science today isn't what it was 20 years ago. Modern-day computers are more like us; they're prepared to sacrifice a certain amount of accuracy for the sake of speed, relying less on exhaustive, resource-intensive calculation and more on smart approximations.

Often there simply *is* no better or worse option; at least, none that can be determined rationally. Learning how computers have evolved to meet this challenge is enlightening, and is a welcome respite from self-help books consisting of opinion dressed up as fact. That's not the case here. All the advice offered in *Algorithms to live by* has been rigorously tested in virtual environments. We *know* what the consequences of following this advice are.

Algorithms to live by thus offers coaches valuable insights into how best to support clients as they engage in the always ongoing and often difficult process of reflective and effective decision-making.