

***Algorithms to Live By: The Computer Science of Human Decisions: Brian Christian and Tom Griffiths, Henry Holt and Co, New York, 2016, 368 pp., ISBN-13: 978-1627790369***

I came across this title in the list of books Amazon thought I might like. It sat in my “to read” pile for a couple of months until I finally read it over the holidays. It is the most fun self-help book I have read in quite a while.

The authors, Brian Christian and Tom Griffiths, are both experts in cognitive science. Christian has published articles in *The Wall Street Journal*, *The Atlantic*, *Gizmodo*, and *Cognitive Science*, to name a few places. Griffiths is the director of the Computational Cognitive Science Lab at UC Berkeley.

The authors follow the pattern of describing a problem in computer science, explaining the solution as it pertains to the computer, then expounding upon how that solution can be used to simplify your life. The underlying theme is to reduce your effort on a number of problems from  $n^2$  to  $n \log(n)$  or ideally  $n$  steps.

One early example is sorting. The authors describe how various algorithms, like the bubble, merge and insertion sort, work and how to apply those algorithms to everyday life. A good example is what to do with the stack of email that greets you every morning. Do you do multiple passes on your inbox and prioritize? Do you sort email? If you sort, how do you sort it? The authors’ solution to dealing with email is: go through it once or it becomes a nonlinear problem adding unnecessary work. The subject of sorting segues into search and ultimately the recommendation to not sort email messages for archival use at all but to let search algorithms find them for you when you need them. I’ve been doing this for a few years now, and it is a huge time saver. The lesson is: search when you can, sort only when you must do so, and if you do sort, sort efficiently.

Many topics are covered in addition to sorting and searching: Optimal Stopping, Explore/Exploit, Caching, Scheduling, Bayes’ Rule, Overfitting, Relaxation, Randomness, Networking, and Game Theory. Each topic is approached with examples of practical applications for real life.

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