New books on the pros and cons of algorithms

Description

Algorithms are means of processing data in ways that can aid our decision making. One of the weak areas of evaluation practice is guidance on data analysis, as distinct from data gathering. In the last year or so I have been searching for useful books on the subject of algorithms â?? what they are, how they work and the risks and opportunities associated with their use. Here are a couple of books I have found worth reading, plus some blog postings.

Books

Christian, B., & Griffiths, T. (2016). *Algorithms To Live By: The Computer Science of Human Decisions.* William Collins. An excellent over view of a wide range of types of algorithms and how they work. I have read this book twice and found a number of ideas within it that have been practically useful for me in my work

Oâ??Neil, C. (2016). *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy.* New York: Crown Publishing Group. A more depressing book, but a necessary read nevertheless. Highlighting the risks posed to human welfare by poorly designed and or poorly used algorithms. One of the examples cited being labor/staff scheduling algorithms, which very effectively minimize labor costs for empowers, but at the cost of employees not being able to predictably schedule child care, second jobs or part time further education, thus in effect locking those people into membership of a low cost labor pool.Some algorithms are able to optimize multiple objectives e.g. labor costs and labor turnover (represented longer term costs), but both objectives are still employer focused. Another area of concern is customer segmentation, where algorithms fed on big data sets enable companies to differentially (and non-transparently) price products and services being sold to ever smaller segments of their consumer population. In the insurance market this can mean that instead of the whole population sharing the costs of health insurance risks, which may in real life fall more on some than others, those costs will now be imposed more specifically on those with the high risks (regardless of the origins of those risks, genetic, environmental or an unknown mix)

Ezrachi, A., & Stucke, M. E. (2016). *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy*. Cambridge, Massachusetts: Harvard University Press. This one is a more in-depth analysis than the one above, focusing on the implications for how our economies work, and can fail to work

Blog postings

Kleinberg, J., Ludwig, J., & Mullainathan, S. (2016, December 8). A Guide to Solving Social Problems with Machine Learning. Retrieved January 5, 2017, from Harvard Business Review website. A blog posting, easy to read and informative

Knight, Will, (2016, November 23) How to Fix Silicon Valleyâ??s Sexist Algorithms, MIT Technology Review

Lipton, Zacharay Chase, (2016) [The foundations of algorithmic bias](). KD Nuggets

Nicholas Diakopoulos and Sorelle Friedler (2016, November 17) [How to Hold Algorithms Accountable](), MIT Technology Review. Algorithmic systems have a way of making mistakes or leading to undesired consequences. Here are five principles to help technologists deal with that.

Category

1. Uncategorized

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