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# The dark side of AI?



**asked a colleague for some book suggestions and was excited** when one of the books on the list was called *Atlas of AI*. I naively jumped to the conclusion that I was going to read about talking cars and robot nannies. Instead, it got me thinking of the 2013 dystopian sci-fi movie *Elysium* directed by Neill Blomkamp, a film I enjoyed watching, but not a world I would ever like to experience myself. This is what Kate Crawford sets out to do in *Atlas of AI* – change the way we think about artificial intelligence.

AI in the context of this book refers to machine-learning systems used, for example, in Google Search, facial detection and recognition, spam filters and Roomba Robot vacuum cleaners. The book sets out to describe AI as the sum of its parts. This includes the more obvious components, like the apps we use and the devices we use to access these apps, as well as the resources that go into the production of these devices. It also includes the less obvious: the training data used by machine learning systems; the labour used to label this data; the environmental and social impact of the extraction and transport of the resources used to produce the devices; and the cost of computation. If you open the book, and not just judge it by its cover, you will come across the full title, *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence*.

Crawford has an impressive list of credentials. She is currently a senior principal researcher at Microsoft, and is also the co-founder and former director of research at NYU's AI Now Institute, to name but a few. The book takes you on a journey by creating an atlas, giving an overview of AI and then zooming in on various parts.

It reads easily and flows well. However, the introduction threw me off a bit, it starts with the story of Clever Hans, a horse who could solve math problems and tell time – to be honest I still don't understand the relevance. The idea behind the Atlas was also not clear initially, but a few pages into the first chapter it all comes together. Below I share highlights of the six main chapters and conclusion.

*Chapter One: Earth* starts with a description of the writer's journey to Silver Peak in Nevada's Clayton Valley, home of the only lithium mine in the US (this is not coincidental given lithium's significant role in battery production). As she travels, she maps out the environmental, political and social impact caused by the production of technological devices as well as large-scale computation. The author does not mince her words:

***“The history of mining, like the devastation it leaves in its wake, is commonly overlooked in the strategic amnesia that accompanies stories of technological progress.”***

In *Chapter Two: Labour* the author suggests that humans are increasingly treated like robots and investigates the impact of this on labour. She also touches on crowdsourcing platforms like Amazon Mechanical Turk, where businesses can hire workers from across the world to perform microtasks, for instance assigning a photo to different categories.

*Chapter Three: Data* and *Chapter Four: Classification* go hand-in-hand. There are many interesting examples of large data sets, how they were compiled, and how they are used, highlighting issues

around data privacy and surveillance. The inherent bias within classification systems makes up a large part of Chapter Four, for me this quote stood out:

***“Every dataset used to train machine learning systems...contains a worldview”.***

*Chapter Five*, meanwhile, discusses affect recognition: deducing the emotional state of a person using facial expressions. It gives a detailed account of the psychologist Paul Ekman’s work and the development of the Facial Action Coding System (FACS), which identifies a set of distinct muscular contractions on the face called action units. This is followed by a discussion on the critiques of Ekman’s theories, as well as examples of where FACS is used.

In *Chapter Six: State* and the *Conclusion: Power*, Crawford ties it all back to the title. She concludes that “AI systems are built with the logics of capital, policing and militarisation – and this combination further widens the existing asymmetries of power”.

For me, the author achieved what she set out to do – she changed the way I think about AI. The colleague who recommended this book said she now feels a pinch of guilt when she looks at her smartphone – I must agree. Chapter One made the biggest impact on me, and I found the chapters on data, classification and affect most interesting; *Atlas of AI* also provided a rich history of data extraction and classification.

There is a passage in the introduction where Crawford mentions that instead of claiming universality, this book is a partial account, and the idea is to take the reader along on an investigation to

understand how her views were formed. It is important to keep this in mind, especially when you get to Chapter Six and the conclusion. I would have appreciated if her investigation included at least some of the benefits of AI, and at times I found her statements unnecessarily scathing.

I would recommend this book to anyone who has a few hours to spare; you will find at least one interesting bit of information on almost every page – an unusual phenomenon in this day and age. Hopefully, it will change the way you think about AI, too. □

Janneke joined M&G Investments in July 2012 and is currently a Quantitative Analyst in the Multi-Asset Team. She is responsible for ensuring that the M&G Investments multi-asset funds are kept in line with their asset allocation models. With 20 years of industry experience, Janneke has worked in a range of Investment Specialist and Data Analyst roles both locally and abroad. She holds a Bachelor of Science degree in Mathematics and Applied Mathematics from the University of Stellenbosch and a Bachelor of Science (Hons) degree in Financial Mathematics from the University of Pretoria.