Crawford, K (2021) Atlas of AI: Power, Politics and the Planetary Costs of Artificial Intelligence. Yale University Press. New Haven and London

The Atlas of AI: Power, Politics and the Planetary Costs of Artificial Intelligence by Kate Crawford is an accessible, rich, prescient[1], and thoroughly researched book on AI which, the author wants us to know from the start, is 'neither artificial nor intelligent' (p.7). Proposing to think about AI as an 'atlas' Crawford expands our field of vision enabling us to see AI as a 'collection of disparate parts, with maps that vary in resolution' (p.9). This dissolves the idea of AI as a monolithic, autonomous, and superior intelligence and shifts our gaze toward how AI is assembled across disparate regions, communities, and practices where entrenched power dynamics are reproduced and amplified.

The book has six chapters that probe artificial intelligence from different angles. In chapter one, 'Earth', we are guided through the material landscapes of AI and the 'lesser-known landscapes of computation' (p.12) such as the mines in Nevada, Congo, Mongolia, and Indonesia where minerals are extracted for manufacturing speakers, electric vehicle motors, batteries that make up the hardware in which AI systems resides. The mining is permanently altering the physical landscape and affecting and displacing communities. In contrast, data centers (the physical correlate of our data stored in the 'cloud') require large amounts of electricity and water to keep the servers running, having an astonishing carbon footprint.

In the 'Labour' chapter the myth of AI as autonomous intelligence is challenged showing instead how human labor is imbuing technology with 'cognition' through, for example, the invisible, low-paid, and repetitive work of building and maintaining AI systems (e.g. data labelling, reviewing harmful user content to editing the AI content). Equally, AI technologies are used to regulate labor in private companies in a way that evolves existing surveillance activities of workers by using ever more sophisticated and invasive technologies for monitoring, tracing, and nudging workers towards increased productivity and success (in offices and warehouses alike). Here we can see the tendency of AI technologies to reify hierarchical power relations in practice – by amplifying existing power asymmetries between humans and machines where the former have little to no 'choice not to collaborate with algorithmic systems' (p.58).

The third and fourth chapters 'Data' and 'Classifications' are key. In 'Data' we learn how the extractive logic of capitalism expanded from material resources and labor towards data as a new 'natural resource', underpinned by the tech sector logic that "everything is data and there for the taking" (p.93) without little concern for consent, risk and responsibility of care (e.g. in the case of datasets for image recognition made out of mugshots of arrested citizens some visibly distressed). We are then introduced to one of the fundamental elements of an AI system – the training dataset. Training datasets act as the building block from which

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[1] For example, re-reading this book in 2024/2025 helped me understand the political pressure for lithium mining in Serbia https://www.bbc.co.uk/news/articles/cged9qgwrvyo or indeed the minerals deal put in front of Ukraine by the current U.S administration.

algorithms learn to make predictions and classifications, set the parameters for how an AI 'sees the world', and can help us understand the 'epistemic boundaries' of an AI system. Using the examples of datasets assembled by law enforcement, and university departments, and scrapped from the internet to train AI algorithms, Crawford shows how the data gathering and labeling process is neither benevolent nor solely a technical act but rather involves making political, theoretical, and value-based decisions about what (and who) is included and what is excluded in the dataset. This discussion continues in the next chapter 'Classification', where we foray deeper into the classificatory logic of training datasets and their relation to power. Here we can see another expression of power in historical and structural inequities seemingly erased through an 'aesthetic of objectivity' yet remain encoded in the AI systems, only to be retrieved later. For instance, when the training dataset has an overrepresentation of male engineers this can later translate into hiring algorithms discriminating against women engineering applicants. Power is additionally encoded in algorithms through the taxonomies that constitute training datasets, such as in the example of Imagenet where the taxonomy of gender is treated as a biological binary, and the label of 'non-binary' belongs to the category of 'sexuality'. What follows from this is that the problem of AI 'bias' is, not a technical matter but a form of preconception or even a prejudice that needs to be transparently negotiated by those commissioning, designing, developing, and using AI systems.

The fifth part 'Affect' describes affect recognition as a particular area of commercial application of AI systems. The AI technologies for affect recognition are deployed at airports, by hiring start-ups and national security to detect and classify emotions based on peoples' facial expressions. This chapter complements previous ones in illustrating how preconceptions embedded in datasets can arise from dubious theories whose main appeal is being amenable to quantifications (although making universal, culture-free claims also helps).

The sixth part 'State' outlines how the intelligence sector in the US (and elsewhere) has funded AI research and development for a long time inscribing in the process military priorities and battlefield terminology. We can identify configurations of state and tech industry partnerships whereby the former provides training data, and the latter has the technical capacity to extract information from the data while also not being subject to the binding privacy laws. Downward expansion of AI technology in the municipal government, police departments, and welfare agencies is another important development. Here the military goal of 'gain[ing] intelligence advantage' (p.193) is re-directed toward its citizens, vulnerable groups, and migrants to screen them from welfare fraud and terrorist inclinations. In this way AI surveillance technologies are creating a loop – vulnerable communities are surveilled more, feeding more data into the system which then subjects them to even more surveillance and scrutiny.

In the concluding sections of this book, Crawford cautions against determinism, either of a utopian or dystopian kind, yet, at the end of the journey we are left with a somewhat pessimistic and helpless feeling about the future of humanity in the era of AI. I found it helpful to offset the pessimism with a more 'can do' genre of another important book that offers a feminist rethinking of data through a set of practical recommendations and

complementing Crawford's discussions on data and classifications particularly well (see D'Iganzio and Klein 2020)

What is underplayed in this book is the distinction between 'surveillance' and 'assistive' AI systems (Guile and Popov 2024; Guile forthcoming). While the former, as the examples in the book show, refer to the commercial or state use of AI in which the algorithms are opaque, proprietary, and further the goals of their designers rather than user groups. The latter examples can be found in medicine to screen for breast cancer and environment to determine and evaluate water risk (for an important distinction and description of assistive ecosystems see Guile, forthcoming) and suggests that AI systems can be collaboratively developed with stakeholders, available to scrutiny and furthering a non-commercial social goal. These examples set important templates for the design, development, and use of all AI systems.

For educators, this book can be a valuable resource as it is brimming with examples and cases that not only illustrate the larger points about AI but can be used as pedagogical resources in the classroom to (a) examine the different forms of power that AI technologies amplify and reproduce through their design, (b) explore the negative effects AI classifications can have on affected communities that are othered through reductions embedded in AI computations (c) discuss the narrow frameworks of 'intelligence' and 'learning' that AI instantiated in the real world and (d) pose questions about how we are implicated in the sprawling AI systems as our data is willingly or unwillingly harvested, shared and feeding into these systems.

Bibliography

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