

Open Source: How Middle Powers Can Build Influence in the Age of AI

Annex A: Defining Open Source

Debates around the definitions of open source, open-source AI and open-weight models are complex and contested. This paper has avoided delving into technical nuances because there is already a large and comprehensive literature base on the subject, and this paper is designed for high-level decision-makers to whom these details add an unnecessary level of complication instead of clarification.

The Open Source Initiative’s definition of open source refers to software that is distributed under a licence that allows anyone to freely use, study, modify and redistribute it – including for commercial purposes – with access to the source code and without discrimination against users and uses.¹ For decades now, openness in software shapes who can build on digital infrastructure, how innovation diffuses, and whether systems can be inspected, maintained and secured over time.²

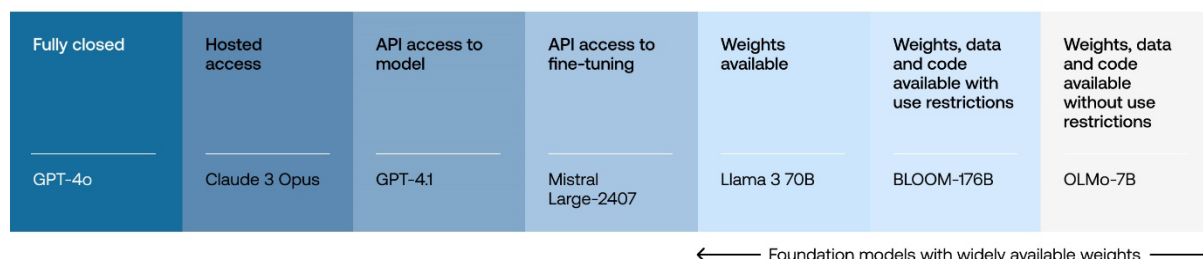
AI complicates this picture. AI systems are not just software code: they are trained artefacts whose behaviour reflects the interaction of multiple components across a wider stack (data, code, compute and model weights). As a result, “open-source AI” does not map neatly onto the software-era definition of open source, and debates that treat “open” or “closed” as a single binary can be misleading. Open-source AI is often conflated with so-called “open-weight” models. These are models where the trained parameters – the numerical weights that determine how the model behaves – are made publicly available, even if much of the rest of the system is not. In practice, openness in AI sits on a spectrum. How “open” a

¹ <https://opensource.org/osd>

² <https://arxiv.org/pdf/2408.06723>

system is depends on which components are shared, such as the model weights themselves, the training code, information about the data used, safety documentation and the licensing terms that govern reuse.

Figure 1 – The Spectrum of Openness in AI Models



Source: Center for AI Policy³

A practical way to resolve this complexity is to talk about openness as a set of design choices across an AI stack that convey varying kinds and degrees of transparency and accessibility. *Towards a Framework for Openness in Foundation Models*, a Columbia-Mozilla report which emerged from the Columbia Convening on Openness and AI, and with which this paper closely aligns, proposes a descriptive framework that separates (a) the model stack (data sets, code, weights and related artefacts) from (b) the system stack (the surrounding infrastructure and product layers that turn a model into a real service), and then highlights cross-cutting attributes that apply across the stack, especially documentation, licensing and safeguards.^{4,5}

In this paper, when we refer to the “open ecosystem” or “openness across the stack”, we leverage the definition from the Columbia Convening on Openness and AI and a subsequent paper from Demos: “the broad public availability and ease of access to key artefacts and documentation from AI across the AI tech stack including AI models (weights and code), data sets, documentation, safety tooling and compute resources”.⁶

³ <https://www.centeraipolicy.org/work/us-open-source-ai-governance>

⁴ <https://arxiv.org/pdf/2405.15802>

⁵ <https://igp.sipa.columbia.edu/news/introducing-columbia-convening-openness-and-ai>

⁶ <https://demos.co.uk/research/the-open-dividend-building-an-ai-openness-strategy-to-unlock-the-uks-ai-potential/>