



ACCESS TO AI: A SPECTRUM FROM OPEN TO CLOSED

There is a range of approaches to developing and providing access to artificial intelligence software. These approaches involve trade-offs for the AI community, users, and society. You may be familiar with the concept of open-source and closed-source software. According to the Open Source Initiative's definition, open-source licenses for open-source software must have specific elements to them.¹ When such terms are applied to AI, they focus on the accessibility and transparency of components of AI models, including the code, the model weights, and other information to allow developers to reproduce and alter the model. However, AI developers use a variety of licensing approaches in addition to the range of access to applications, application programming interfaces (APIs), or source code. Below, we depict a simplified view of the two ends of the AI spectrum — the "open" end and the "closed" end. However, it is important to understand the nuance of the many choices along the spectrum between these two states.

What is Open-Access AI?

Open-access AI includes both AI software and models released under open-source licenses and also under other licenses that allow access to the internal workings of the AI software but are not as liberal as open-source licenses. This generally means that not only is the AI surface accessible, but some or all of the AI system underneath, including its code and model weights, may be available for public scrutiny and modification. Developers and researchers can collaborate to improve the AI system. Much of the field's progress in recent years has been made possible through the development and diffusion of open-access AI.²

BENEFITS:

- Others can view and adapt the model for bespoke use cases.³
- Lowers barriers to entry and helps startups develop new technologies.⁴
- Allows for creative development and customization.
- While some critique open-access for cybersecurity concerns, the openness also allows for more collaboration, testing, red teaming, etc.

What is Closed-Access AI?

Closed-access, or proprietary AI, refers to AI software developed and released following closed-source principles. A closed-access AI system is AI software developed, owned, and controlled by a single entity or organization. The model code is typically not publicly available, and users may have limited access to the system's internal workings.

Closed-access AI refers to AI software where the internal workings, including the code and model weights, are inaccessible to the public. Users typically interact with the AI through APIs or user interfaces, but they cannot access the underlying code or model architecture.

BENEFITS:

- Allow organizations to protect their intellectual property (proprietary algorithms and technologies).
- Offer more control over the technology and its data, which can be important for security and privacy concerns.
- While some critique companies for closing access to source code and model weights to monetize their technology, it also prevents causing harm by not disseminating advanced AI capabilities that could be used by malicious actors.

What Systems Are Open or Closed?

AI companies are not inherently open- or closed-access, that choice is made at the system level. Many companies, such as Google and OpenAI, that offer closed models still promote openness in their development and proliferation of AI – publishing AI research and open-source tools and resources.⁵ For example, Google originally developed TensorFlow in-house and later released it as an open-source software library for building AI.⁶ There are many open-access and closed-access AI systems on the market. *One example of an open-access system is Meta’s LLaMA 2. Examples of closed-access systems include Google’s Bard and OpenAI’s ChatGPT.*

In summary, the primary difference between open-access AI and closed-access AI lies in the accessibility of the model code and model weights and the level of control and customization available to users. The choice between open and closed access AI depends on the specific needs and preferences of developers, organizations, and users.

¹ Open Source Initiative. "The Open Source Definition." February 23, 2023. <https://opensource.org/osd/>.

² Pablo Chavez, "An AI Challenge: Balancing Open and Closed Systems," CEPA, May 30, 2023, <https://cepa.org/article/an-ai-challenge-balancing-open-and-closed-systems/>.

³ Ryan Heath, "As Open Source AI Models Grow in Popularity, Some Alarms Sound," Axios, June 26, 2023, <https://www.axios.com/2023/06/26/ais-next-battle-open-closed-chatgpt>.

⁴ Heath.

⁵ Chavez.

⁶ Chavez.