



ZOOM

Codes Bound by Ethics: The Rising Tide of Non-Free Software Licenses in AI Ecosystems

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Agenda

- Openness as an Ethical Consideration
- Reasons for Engaging with Free Software
- What “open” AI should mean in practice v. Current state
- Imposition of additional behavioral restrictions by licensing & their implications

Free and Open Source



Free Software

Open Source



Definition by the Free Software Foundation

Definition by the Open Source Initiative



. Freedom 0
Run the software for any purpose

. Freedom 1
Study the source code

. Freedom 2
Redistribution of copies

. Freedom 3
Improvement of the software and
redistribution of derivative works

1. Free Redistribution

2. Source Code

3. Derived Works

4. Integrity of The Author's Source Code

5. No Discrimination Against Persons or Groups

6. No Discrimination Against Fields of Endeavor

7. Distribution of License

8. License Must Not Be Specific to a Product

9. License Must Not Restrict Other Software

10. License Must Be Technology-Neutral

Reasons for Engaging with Free Software



Autonomy

Free Software helps to develop and maintain tailored software that suits your needs, not just the vendor's business model.



Share & Copy

A Free Software licence allows a limitless number of installations to be run, without paying extra.



Reuse Code

Free Software provides the freedom to reuse the code for other projects.



Competition

Free Software resists monopolisation and enhances competition.



Collaboration

Free Software can be shared and used in a non-exclusive way by everyone – serving the public good.



No Lock-in

Free Software licences reinforce independence from vendors and provide more choice in service providers.



Innovation

A Free Software licence encourages innovation for your software.



Security

Free Software allows for independent security checks that help close security holes faster.



AI SYSTEMS

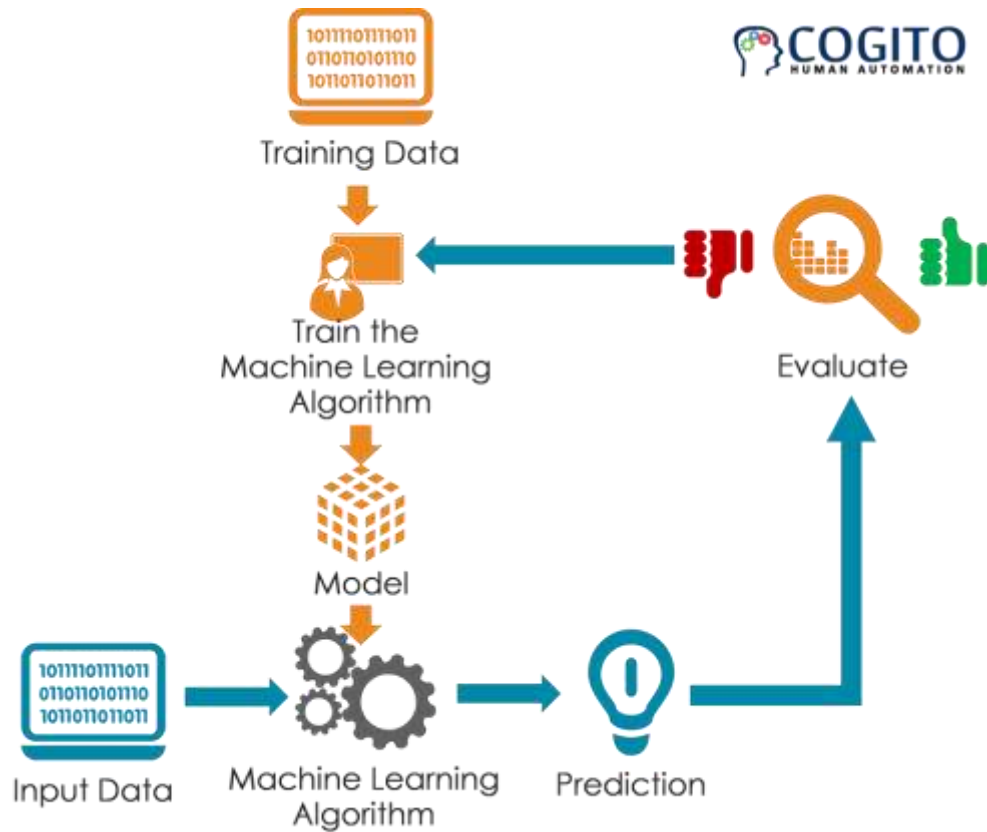


Figure source: What is a training data set in Machine Learning and rules to select them? Cogito, 2018

Don't operate like traditional software

Multiple interconnected components (training data, model architecture, algorithms, tokenizers, inference engine etc.)

Require distinct development process & rely on specialized resources (mostly available with BigTech)

Oversight



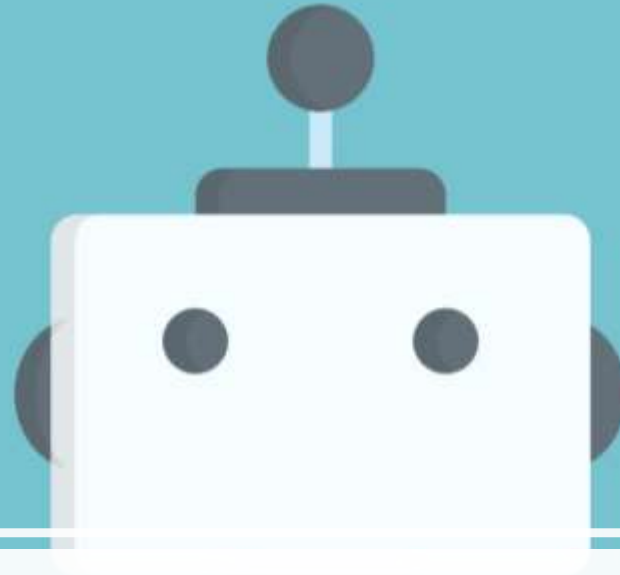
Enablement



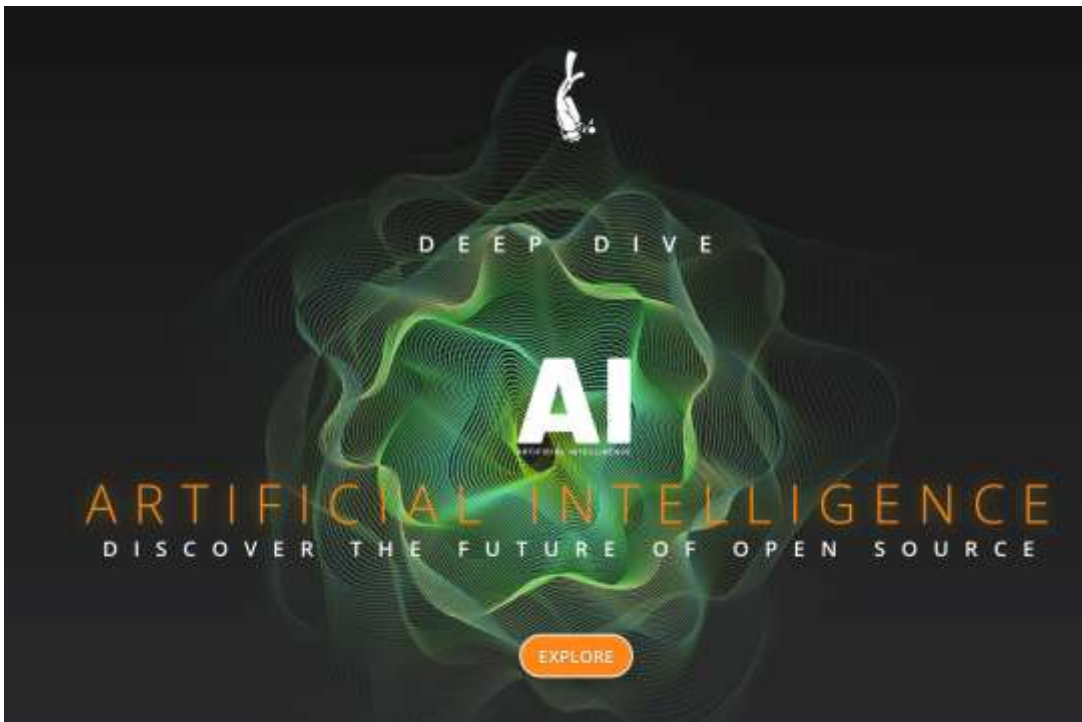
Reusability



Transparency



What “open” AI should mean in practice?



OSI's Open Source AI Definition Draft v. 0.0.5, Jan 30, 2024

“Preamble

The Open Source AI Definition doesn't say how to develop and deploy an AI system that is ethical, trustworthy or responsible, although it doesn't prevent it. What makes an AI system ethical, responsible, or trustworthy or effective is a separate discussion. We support efforts to work on these issues, including through appropriate government regulation.”

“What is Open Source AI

To be Open Source, an AI system needs to be available under legal terms that grant the freedoms to:

Use the system for any purpose and without having to ask for permission.

Study how the system works and inspect its components.

Modify the system for any purpose, including to change its output

Share the system for others to use with or without modifications, for any purpose.”

Use

The software can be used for any purpose without restrictions.



Study

The software and its code can be analyzed by anyone.



Share

The software can be shared without limitations.



Improve

The software can be modified by you or others to give back to the community.

Connotation of FOSS in AI domain today

- Definitions of AI & “Open AI” not defined
- AI labelled as “open” exists on a long gradient

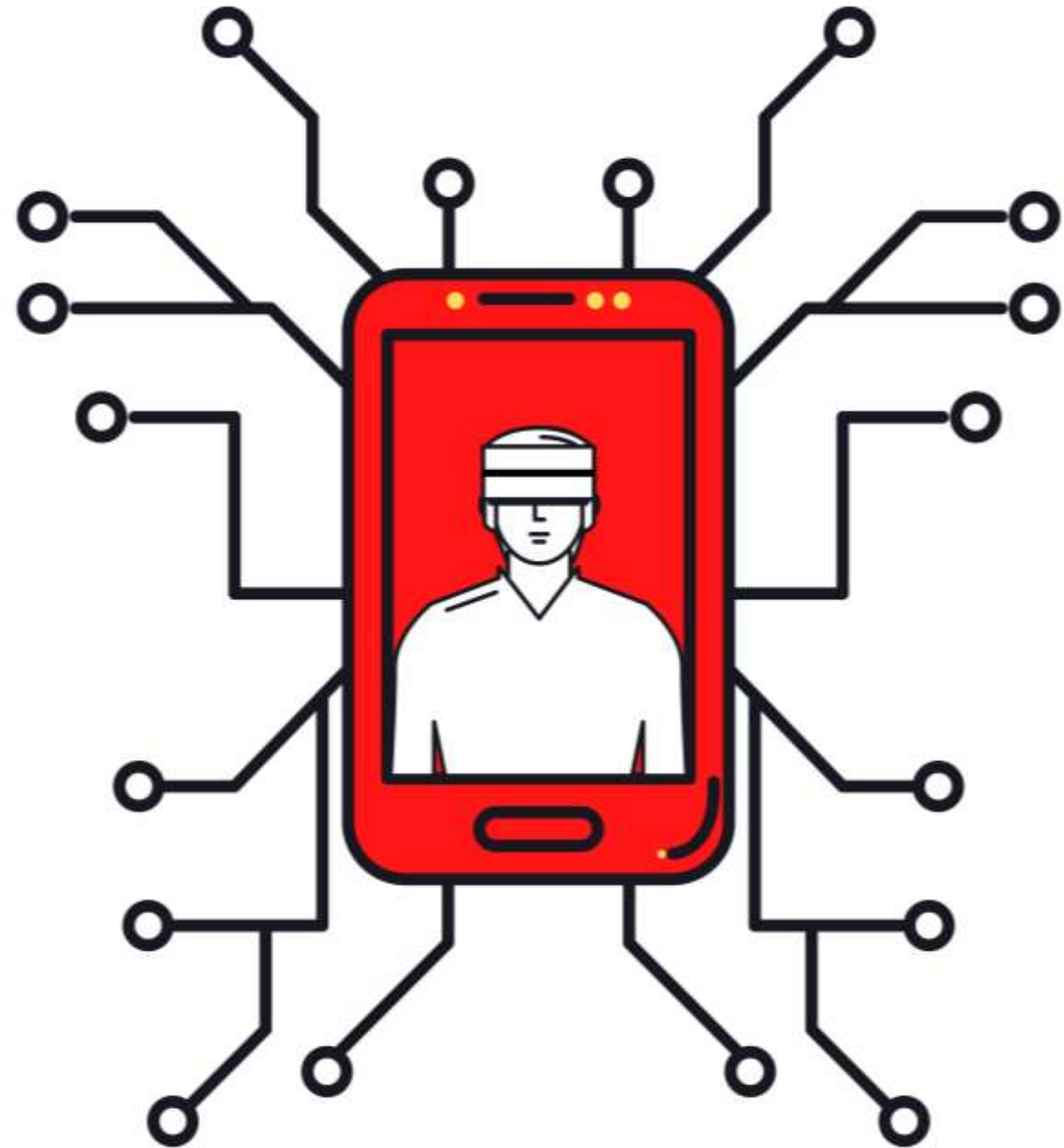
Considerations	internal research only high risk control low auditability limited perspectives					community research low risk control high auditability broader perspectives
Level of Access	fully closed	gradual/staged release	hosted access	cloud-based/API access	downloadable	fully open
System (Developer)	PaLM (Google) Gopher (DeepMind) Imagen (Google) Make-A-Video (Meta)	GPT-2 (OpenAI) Stable Diffusion (Stability AI)	DALL·E-2 (OpenAI) Midjourney (Midjourney)	GPT-3 (OpenAI)	OPT (Meta) Craiyon (craiyon)	BLOOM (BigScience) GPT-J (EleutherAI)

Figure source: Solaiman, I. (2023). “The Gradient of Generative AI Release: Methods and Considerations.” arXiv, <https://doi.org/10.48550/arXiv.2302.04844>.

Imposition of additional behavioral restrictions by licensing

Restrictions related to:

- Field of endeavor
 - Behavior
 - Community Management
 - Commercial Practice
 - “Ethical” incompatibility
-



Hippocratic License v.3.0, Oct '21



3. ETHICAL STANDARDS:

This section lists conditions the Licensee must comply with in order to have rights under this License.

The rights granted to the Licensee by this License are expressly made subject to the Licensee's ongoing compliance with the following conditions:

3.1. The Licensee SHALL NOT, whether directly or indirectly, through agents or assigns:

3.1.1. Infringe upon any person's right to life or security of person, engage in extrajudicial killings, or commit murder, without lawful cause (See Article 3, *United Nations Universal Declaration of Human Rights*; Article 6, *International Covenant on Civil and Political Rights*)

3.1.2. Hold any person in slavery, servitude, or forced labor (See Article 4, *United Nations Universal Declaration of Human Rights*; Article 8, *International Covenant on Civil and Political Rights*);

3.1.3. Contribute to the institution of slavery, slave trading, forced labor, or unlawful child labor (See Article 4, *United Nations Universal Declaration of Human Rights*; Article 8, *International Covenant on Civil and Political Rights*);

3.1.4. Torture or subject any person to cruel, inhumane, or degrading treatment or punishment (See Article 5, *United Nations Universal Declaration of Human Rights*; Article 7, *International Covenant on Civil and Political Rights*);

3.1.5. Discriminate on the basis of sex, gender, sexual orientation, race, ethnicity, nationality, religion, caste, age, medical disability or impairment, and/or any other like circumstances (See Article 7, *United Nations Universal Declaration of Human Rights*; Article 2, *International Covenant on Economic, Social and Cultural Rights*; Article 26, *International Covenant on Civil and Political Rights*);

3.1.6. Prevent any person from exercising his/her/their right to seek an effective remedy by a competent court or national tribunal (including domestic judicial systems, international courts, arbitration bodies, and other adjudicating bodies) for actions violating the fundamental rights granted to him/her/them by applicable constitutions, applicable laws, or by this License (See Article 8, *United Nations Universal Declaration of Human Rights*; Articles 9 and 14, *International Covenant on Civil and Political Rights*);

3.1.7. Subject any person to arbitrary arrest, detention, or exile (See Article 9, *United Nations Universal Declaration of Human Rights*; Article 9, *International Covenant on Civil and Political Rights*);

3.1.8. Subject any person to arbitrary interference with a person's privacy, family, home, or correspondence without the express written consent of the person (See Article 12, *United Nations Universal Declaration of Human Rights*; Article 17, *International Covenant on Civil and Political Rights*);

3.1.9. Arbitrarily deprive any person of his/her/their property (See Article 17, *United Nations Universal Declaration of Human Rights*);

3.1.10. Forcibly remove indigenous peoples from their lands or territories or take any action with the aim or effect of dispossessing indigenous peoples from their lands, territories, or resources, including without limitation the intellectual property or traditional knowledge of indigenous peoples, without the free, prior, and informed consent of indigenous peoples concerned (See Articles 8 and 10, *United Nations Declaration on the Rights of Indigenous Peoples*);

3.1.1. *Fossil Fuel Divestment*: Be an individual or entity, or a representative, agent, affiliate, successor, attorney, or assign of an individual or entity, on the [FFI Solutions Carbon Underground 200 list](#) ;



Prohibited Uses

We want everyone to use Llama 2 safely and responsibly. You agree you will not use, or allow others to use, Llama 2 to:

1. Violate the law or others' rights, including to:

a. Engage in, promote, generate, contribute to, encourage, plan, incite, or further illegal or unlawful activity or content, such as:

i. Violence or terrorism

ii. Exploitation or harm to children, including the solicitation, creation, acquisition, or dissemination of child exploitative content or failure to report Child Sexual Abuse Material

b. Human trafficking, exploitation, and sexual violence

iii. The illegal distribution of information or materials to minors, including obscene materials, or failure to employ legally required age-gating in connection with such information or materials.

iv. Sexual solicitation

vi. Any other criminal activity

c. Engage in, promote, incite, or facilitate the harassment, abuse, threatening, or bullying of individuals or groups of individuals

d. Engage in, promote, incite, or facilitate discrimination or other unlawful or harmful conduct in the provision of employment, employment benefits, credit, housing, other economic benefits, or other essential goods and services

e. Engage in the unauthorized or unlicensed practice of any profession including, but not limited to, financial, legal, medical/health, or related professional practices

f. Collect, process, disclose, generate, or infer health, demographic, or other sensitive personal or private information about individuals without rights and consents required by applicable laws

g. Engage in or facilitate any action or generate any content that infringes, misappropriates, or otherwise violates any third-party rights, including the outputs or results of any products or services using the Llama 2 Materials

h. Create, generate, or facilitate the creation of malicious code, malware, computer viruses or do anything else that could disable, overburden, interfere with or impair the proper working, integrity, operation or appearance of a website or computer system

2. Engage in, promote, incite, facilitate, or assist in the planning or development of activities that present a risk of death or bodily harm to individuals, including use of Llama 2 related to the following:

a. Military, warfare, nuclear industries or applications, espionage, use for materials or activities that are subject to the International Traffic Arms Regulations (ITAR) maintained by the United States Department of State

b. Guns and illegal weapons (including weapon development)

c. Illegal drugs and regulated/controlled substances

d. Operation of critical infrastructure, transportation technologies, or heavy machinery

e. Self-harm or harm to others, including suicide, cutting, and eating disorders

Llama 2 v2 (2023)

<https://ai.meta.com/llama/use-policy/>



Use Restrictions



You agree not to use the Model or Derivatives of the Model:

- (a) In any way that violates any applicable national, federal, state, local or international law or regulation;
- (b) For the purpose of exploiting, harming or attempting to exploit or harm minors in any way;
- (c) To generate or disseminate verifiably false information and/or content with the purpose of harming others;
- (d) To generate or disseminate personal identifiable information that can be used to harm an individual;
- (e) To generate or disseminate information and/or content (e.g. images, code, posts, articles), and place the information and/or content in any context (e.g. bot generating tweets) without expressly and intelligibly disclaiming that the information and/or content is machine generated;
- (f) To defame, disparage or otherwise harass others;
- (g) To impersonate or attempt to impersonate (e.g. deepfakes) others without their consent;
- (h) For fully automated decision making that adversely impacts an individual's legal rights or otherwise creates or modifies a binding, enforceable obligation;
- (i) For any use intended to or which has the effect of discriminating against or harming individuals or groups based on online or offline social behavior or known or predicted personal or personality characteristics;
- (j) To exploit any of the vulnerabilities of a specific group of persons based on their age, social, physical or mental characteristics, in order to materially distort the behavior of a person pertaining to that group in a manner that causes or is likely to cause that person or another person physical or psychological harm;
- (k) For any use intended to or which has the effect of discriminating against individuals or groups based on legally protected characteristics or categories;
- (l) To provide medical advice and medical results interpretation;
- (m) To generate or disseminate information for the purpose to be used for administration of justice, law enforcement, immigration or asylum processes, such as predicting an individual will commit fraud/crime commitment (e.g. by text profiling, drawing causal relationships between assertions made in documents, indiscriminate and arbitrarily-targeted use).

BigScience Open RAIL-M License
dated August 18, 2022

Implications of use of licenses with additional behavioral restrictions



BARRIERS AGAINST USE &
REUSE



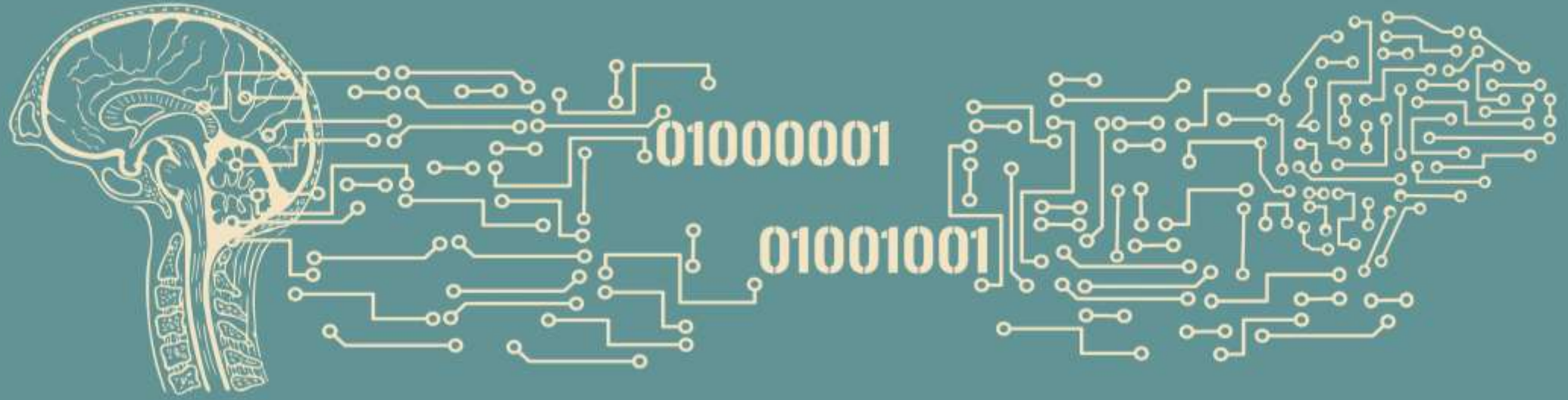
HURDLES TO ADAPTION &
IMPROVEMENT



HINDERANCES TO
CONTROL OVER
TECHNOLOGY



WEAKENING OF
OVERSIGHT &
TRANSPARENCY



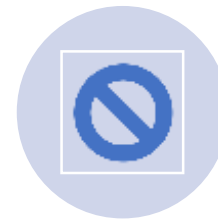
Conclusion



PRESERVE "OPENNESS" IN AI



KEEP LICENSES
INTEROPERABLE WITH FREE
SOFTWARE LICENSES



ACCESSIBILITY, REUSABILITY
AND SUSTAINABILITY OF AI
SYSTEMS



ETHICAL COMPLIANCE
CHECKS MUST FALL WITHIN
THE PURVIEW OF
REGULATIONS AND NOT
SOFTWARE LICENSES





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Thank You!

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