OPEN SOURCE AI DEFINITION

Online public townhall

April 19, 2024

last updated: April 18, 2024 (MJ)
Community agreements

- **One Mic, One Speaker** -- Please allow one person to speak at a time.
- **Take Space, Make Space** -- If you tend to talk more, we invite you to make space for others to share. If you tend not to share, we invite you to speak up.
- **Kindness** -- This work is hard, but we don’t have to be. Gentleness and curiosity help. Those who use insults or hate speech will need to leave the meeting.
- **Forward Motion** -- We advance by focusing on what is possible in the moment and doing it. Obstacles are marked for later discussion, not used to stop the process. If we hit a boulder, we note it on the map and keep walking. We’ll come back and unearth it later on.
- **Solution-Seeking** -- This work is so complex that focusing on what won’t work will stop it. Suggesting new ideas, options, and proposals is vulnerable, but crucial. All of us are needed to make this work.
- **Anything else?**
OSI’s objective for 2024

Open Source AI Definition
Open Source AI Definition
Where Are We Now?
Open Source AI

Definition

Elements

v.0.0.7

Preamble

Why was Open Source Artificial Intelligence (AI) defined?

Open Source AI has demonstrated that innovative benefits arise when open source policies are introduced to reduce barriers to entry in artificial intelligence. Therefore, the need to improve the visibility of using software that enables Open Source AI activities. This includes strategies to encourage, promote, and facilitate contributions.

Out of scope issues

The Preamble to the Open Source AI Definition includes a set of important considerations that are not covered by the definition. These considerations are included to address issues that fall outside the scope of the definition.

Legal Checklist

Revising draft

Done … ish?

4 Freedoms

Out of Scope Issues

What is Open Source AI?

A distribution of software that is delivered under the open source license. Open Source AI is a form of software that is freely available and can be modified and distributed by others. The definition of Open Source AI is not limited to the software used in AI applications, but also includes the tools and methodologies used to develop and deploy AI systems.
Open Source AI Definition
The Co-Design Process
Fall 2023: The 4 Freedoms
The 4 Freedoms for AI

Use • Study • Modify • Share

What should these open source principles mean for artificial intelligence?
Co-Design Workshop: Monterey

TOWARDS A DEFINITION
OPEN SOURCE AI
Community meeting
Oct 25, 2023 - Monterey

Become a member of OSI
https://members.opensource.org/join

Share the system, with or without modifications, for any purpose [without limitations].

Study
Study how the AI system works, and inspect its components. Access to the AI system components in the preferred form to modify is a precondition of this.
Co-Design Workshop: Addis Ababa
Open Source AI Definition

The 4 Freedoms for AI

1. **Use** the system for any purpose and without having to ask for permission.
2. **Study** how the system works and inspect its components.
3. **Modify** the system for any purpose, including to change its output.
4. **Share** the system for others to use with or without modifications, for any purpose.
Open Source AI Definition

The Co-Design Process

Winter 2023-24: Required Components
What components must be open in order for an AI system to be used, studied, modified, and shared?
Group Instructions

1: Introduce (10 minutes)
- Name
- Pronouns
- “The way I interact with AI is...”

2: Brainstorm (30 minutes)
- Prompt: For your group’s AI system, how should the four freedoms apply to the components code, model, and data for the system to be licensed as open source?
- Generate edit options without judgment.
- Share opinions and information with others in your group.

3: Write (10 minutes)
- Write your conclusions on the butcher paper to document it.
- Decide how to summarize your recommendations in a few sentences.

Select Roles
- **Moderator**: Ensure your group moves through the steps on time.
- **Spokesperson**: Report the group’s edits to the main group.
Selected to represent a diversity of approaches to AI openness:

1. **Llama 2**: commercial project, accompanied by limited amount of science and with a restrictive license
2. **BLOOM**: open science project, with lots of details released but shared with a restrictive license
3. **Pythia**: open science project, with a permissive license
4. **OpenCV**: open source project, with ML components outside of the generative AI space
### Workgroup Members

**Llama 2**
1. Bastien Guerry
   DINUM, French public administration
2. Ezequiel Lanza
   Intel
3. Roman Shaposhnik
   Apache Software Foundation
4. Davide Testuggine
   Meta
5. Jonathan Torres
   Meta
6. Stefano Zacchirol
   Polytechnic Institute of Paris
7. Mo Zhou
   Debian, Johns Hopkins University
8. Victor Lu
   independent database consultant

**BLOOM**
1. George C. G. Barbosa
   Fundação Oswaldo Cruz
2. Daniel Brumund
   GIZ FAIR Forward - AI for all
3. Danish Contractor
   BLOOM Model Gov. WG
4. Abdoulaye Diack
   Google
5. Jaan Li
   University of Tartu, Phare Health
6. Jean-Pierre Lorre
   LINAGORA, OpenLLM-France
7. Ofentse Phuti
   WiMLDS Gaborone
8. Caleb Fianku Quao
   Kwame Nkrumah University of Science and Technology, Kumasi

**Pythia**
1. Seo-Young Isabelle Hwang
   Samsung
2. Cailean Osborne
   University of Oxford, Linux Foundation
3. Stella Biderman
   EleutherAI
4. Justin Colannino
   Microsoft
5. Hailey Schoelkopf
   EleutherAI
6. Aviya Skowron
   EleutherAI

**OpenCV**
1. Rahmat Akintola
   Cubeseed Africa
2. Ignatius Ezeani
   Lancaster University
3. Kevin Harerimana
   CMU Africa
4. Satya Mallick
   OpenCV
5. David Manset
   ITU
6. Phil Nelson
   OpenCV
7. Tlamelo Makati
   WiMLDS Gaborone, Technological University Dublin
8. Minyechil Alehegn
   Tefera Mizan Tepi University
9. Akosua Twumasi
   Ghana Health Service
10. Rasim Sen
    Oasis Software Technology Ltd.

To achieve better global representation, we conducted outreach to Black, Indigenous, and other people of color, particularly women and individuals from the Global South. Over 50% of all workgroup participants are people of color.
The Model Openness Framework: Promoting Completeness and Openness for Reproducibility, Transparency and Usability in AI

Matt White\(^{1,2}\), Ibrahim Haddad\(^2\), Cailean Osborne\(^{2,3}\), Xiao-Yang (Yanglet) Liu\(^{4}\), Ahmed Abdelmonsef\(^1\), Sachin Varghese\(^1\)

\(^{1}\)LF AI & Data - Generative AI Commons, \(^{2}\)Linux Foundation, \(^{3}\)University of Oxford, \(^{4}\)Columbia University

matt.white@berkeley.edu, ibrahim@linuxfoundation.org, cailean.osborne@oii.ox.ac.uk, xl12427@columbia.edu, \{ahmed.abdelmonsef, sachiin.varghese\}@genaicommons.org

Abstract

Generative AI (GAI) offers unprecedented possibilities but its commercialization has raised concerns about transparency, reproducibility, bias, and safety. Many "open-source" GAI models lack the necessary components for full understanding and reproduction, and some use restrictive licenses, a practice known as "openwashing." We propose the
## Workgroups: Required Component Selection

### Component List

<table>
<thead>
<tr>
<th>Code</th>
<th>Required to Use?</th>
<th>Required to Study?</th>
<th>Required to Modify?</th>
<th>Required to Share?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data preprocessing code</td>
<td>SZ</td>
<td>SZ EL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training code</td>
<td>SZ</td>
<td>SZ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test code</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code used to perform inference for benchmark tests</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Validation code</td>
<td></td>
<td>SZ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inference code</td>
<td>SM, EL, DT, SM, JT, SZ</td>
<td>SZ</td>
<td>SZ</td>
<td>SZ</td>
</tr>
<tr>
<td>Evaluation code</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other libraries or code artifacts that are part of the system, such as tokenizers and hyperparameter search code, if used.</td>
<td>BG, EL, SM, SZ</td>
<td>SZ</td>
<td>SZ</td>
<td>SZ</td>
</tr>
</tbody>
</table>

Example: Llama 2 Workgroup
Workgroups: Required Component Selection

Component List

Component Votes

Vote Compilation

<table>
<thead>
<tr>
<th>Components</th>
<th>Recommendation</th>
<th>Rationale</th>
<th>Total</th>
<th>Vote Tally (AVG=µ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Learn yes</td>
<td>Likely required to study and - → 25</td>
<td>17</td>
<td>±2</td>
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<tr>
<td>Training</td>
<td>Required to study → 39</td>
<td>24</td>
<td>2</td>
<td>13</td>
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<tr>
<td>Code named code</td>
<td>Combined into category</td>
<td>Necessary for study, maybe → 4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Validation</td>
<td>Necessary for study, maybe → 2</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Test code</td>
<td>Yes</td>
<td>Required to use and → 38</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Code used to perform inference for benchmark tests</td>
<td>Learn no</td>
<td>Possibly required to study → 15</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Vote</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Data

<table>
<thead>
<tr>
<th>Components</th>
<th>Recommendation</th>
<th>Rationale</th>
<th>Total</th>
<th>Vote Tally (AVG=µ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Datasets</td>
<td>Maybe</td>
<td>Various datasets possibly no → 17</td>
<td>12</td>
<td>0</td>
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<tr>
<td>Training</td>
<td>Possibly required for study → 20</td>
<td>13</td>
<td>1</td>
<td>6</td>
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<tr>
<td>Testing</td>
<td>Possibly required for study → 19</td>
<td>14</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Validation</td>
<td>Likely not required for study → 13</td>
<td>9</td>
<td>-1</td>
<td>5</td>
</tr>
<tr>
<td>Benchmarking datasets</td>
<td>Learn no</td>
<td>Not required for study → 15</td>
<td>10</td>
<td>-1</td>
</tr>
<tr>
<td>Data card</td>
<td>No</td>
<td>Not required for study → 1</td>
<td>6</td>
<td>-3</td>
</tr>
<tr>
<td>Evaluation metrics and results</td>
<td>Not required for study → 1</td>
<td>4</td>
<td>-3</td>
<td>-1</td>
</tr>
<tr>
<td>Evaluation code</td>
<td>No</td>
<td>Not required for study → 3</td>
<td>7</td>
<td>-3</td>
</tr>
<tr>
<td>Evaluation results</td>
<td>No</td>
<td>Not required for study → 5</td>
<td>9</td>
<td>-3</td>
</tr>
<tr>
<td>All other documentation</td>
<td>Learn no</td>
<td>Possibly required for study → 13</td>
<td>10</td>
<td>-1</td>
</tr>
</tbody>
</table>

Legend

Yes = Required (≥2 votes)
Yes = Likely required (1.5-2 votes)
Maybe = Possibly required (1-1.5 votes)
No = Not required (<1.5 votes)

µ = average votes per component

As of 2/28/24 µ =
### Workgroups: Required Component Selection

**Component List**

<table>
<thead>
<tr>
<th>Component</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data preprocessing code</td>
<td>5</td>
</tr>
<tr>
<td>Training code</td>
<td>7</td>
</tr>
<tr>
<td>Test code</td>
<td>8</td>
</tr>
<tr>
<td>Code used to perform inference for benchmark tests</td>
<td>9</td>
</tr>
</tbody>
</table>

**Component Compilation**

- Code all code used to parse and process data, including:
- Data preprocessing code
- Training code
- Test code
- Code used to perform inference for benchmark tests

**Recommendation Report**

**Recommendations**

The recommendations below respond to the question:

- Should X component be required for an AI system to be licensed as open?

Based on the number of votes for each component across all working groups, the following:

**Required**

- Training, validation, and testing code
- Inference code
- Model architecture
- Model parameters
- Supporting libraries & tools

**Likely Required**

- Data preprocessing code

**Maybe Required**

- Training datasets
- Testing datasets
- Usage documentation
- Research paper
# Workgroups: Required Component Selection

## Component List

<table>
<thead>
<tr>
<th>Component</th>
<th>Votes</th>
<th>Definition Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

## Component Votes

<table>
<thead>
<tr>
<th>Component</th>
<th>Vote Compilation</th>
<th>Recommendation Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

## Vote

- **Component**: ...
- **Votes**: ...

## Report

**Recommendations**
- Should X component be required for an AI system to be deemed as open?
- Based on the number of votes for each component, the following recommendations are made:
  - **Required**
    - Training, validation, and testing code
    - Inference code
    - Model architecture
    - Supporting libraries & tools
  - **Likely Required**
    - Data preprocessing code
    - Model parameters

**Checklist to evaluate legal documents**

<table>
<thead>
<tr>
<th>Required components</th>
<th>Legal frameworks</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

**Optional components**

- Code used to perform inference for benchmark tests
# Open Source AI Definition v.0.0.7

## Required Components

### Code
- Data pre-processing
- Training, validation and testing
- Inference
- Supporting libraries and tools

### Model
- Model architecture
- Model parameters (including weights)

### Data transparency
- Training methodologies and techniques
- Training data scope and characteristics
- Training data provenance (including how data was obtained and selected)
- Training data labeling procedures, if used
- Training data cleaning methodology
# Open Source AI Definition v.0.0.7

## Required Components: Legal Frameworks

<table>
<thead>
<tr>
<th>Required components</th>
<th>Legal frameworks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td></td>
</tr>
<tr>
<td>- Data pre-processing</td>
<td>Available under OSI-compliant license</td>
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<td>- Training, validation and testing</td>
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<td>Available under OSI-compliant license</td>
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<td>- Model parameters (including weights)</td>
<td>Available under terms compatible with Open Source principles</td>
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Open Source AI Definition v.0.0.7

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</table>
Open Source AI Definition

The Co-Design Process

Representation, Inclusion, and Equity
Equitable and inclusive stakeholder representation isn’t only about justice, it’s about legitimacy.

A **global** definition requires **global** consultation.
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. System Creator</td>
<td>Makes AI system and/or component that will be studied, used, modified, or shared through an open source license</td>
<td>ML researcher in academia or industry</td>
</tr>
<tr>
<td>2. License Creator</td>
<td>Writes or edits the open source license to be applied to the AI system or component, includes compliance</td>
<td>IP lawyer</td>
</tr>
<tr>
<td>3. Regulator</td>
<td>Writes or edits rules governing licenses and systems</td>
<td>government policy-maker</td>
</tr>
<tr>
<td>4. Licensee</td>
<td>Seeks to study, use modify, or share an open source AI system</td>
<td>AI engineer in industry, health researcher in academia</td>
</tr>
<tr>
<td>5. End User</td>
<td>Consumes a system output, but does not seek to study, use, modify, or share the system</td>
<td>student using a chatbot to write a report, artist creating an image</td>
</tr>
<tr>
<td>6. Subject</td>
<td>Affected upstream or downstream by a system output without interacting with it intentionally + advocates for this group.</td>
<td>photographer who finds their image in training dataset (upstream), mortgage applicant evaluated by a bank’s AI system (downstream)</td>
</tr>
<tr>
<td>Stakeholder</td>
<td>Description</td>
<td>Example</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
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</tr>
</tbody>
</table>
Seeking document reviewers for Pythia and OpenCV

Mer

**TASK:** As part of the systems review track, we’re looking for volunteers to review licenses for the Pythia and OpenCV systems and fill out this spreadsheet to check the compatibility of version 0.0.6 of our definition with current AI systems.

**TIMELINE:** Our goal was to complete this review by next Tuesday, April 2nd, though we’ll likely extend the deadline in consultation with the volunteers who respond.

**VOLUNTEERS:** For transparency, reviewers will have their names and affiliations made public. Black, Indigenous, Latine, and other people of color, women, queer, transgender, and non-binary people, people with disabilities, and people from poor and working class backgrounds are encouraged to respond.

**LEARN MORE** Reviewers are already assigned in the Llama 2 and BLOOM groups. We have two reviewers for Pythia and are seeking more. We have no reviewers yet for OpenCV. Further information on the workgroups and their past activities can be found here.
Open Source AI Definition

The Co-Design Process

Next Steps
## 2024 Timeline

<table>
<thead>
<tr>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June ...</th>
<th>... October</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call For Volunteers + Activity Feedback and Revision</td>
<td>Virtual System Review Meetings Begin</td>
<td>Virtual System Review Meetings Continue</td>
<td>Virtual System Review Meetings END</td>
<td>Feedback Informs Content of OSI In-Person Stakeholder Meeting</td>
<td>Monthly Virtual Meetings</td>
</tr>
</tbody>
</table>
| Bi-Weekly Virtual Public Townhalls | Bi-Weekly Virtual Public Townhalls | Bi-Weekly Virtual Public Townhalls | Townhalls + PyCon Workshop (≈ May 17th, Pittsburgh) | Townhall + OSI In-Person Stakeholder Meeting | Release stable version

- **Draft 0.0.5**
- **Draft 0.0.6**
- **Draft 0.0.7**
- **Draft 0.0.8**
- **RC1**
- **Stable Version**

**OSAI v. 0.0.7** last Friday, April 12th
# In-Person Meetings

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>City</th>
<th>Conference</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>North America</td>
<td>United States</td>
<td>Pittsburgh</td>
<td>PyCon US</td>
<td>May 17</td>
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<tr>
<td>Europe</td>
<td>France</td>
<td>Paris</td>
<td>OW2</td>
<td>June</td>
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<td>Africa</td>
<td>Nigeria</td>
<td>Lagos</td>
<td>Sustain Africa</td>
<td>June</td>
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<tr>
<td>North America</td>
<td>United States</td>
<td>New York</td>
<td>OSPOs for Good</td>
<td>July 9 - 11</td>
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<td>AI_dev</td>
<td>August 23</td>
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<td>Argentina</td>
<td>Buenos Aires</td>
<td>Nerdearla</td>
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<td>France</td>
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<td>(data governance)</td>
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<td>United States</td>
<td>Raleigh</td>
<td>All Things Open</td>
<td>Oct 27 - 29</td>
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Open Source AI Definition

Stay Connected

- Public forum: discuss.opensource.org
- Become an OSI Member
  - Free or full
  - SSO with other OSI websites
- Biweekly virtual town halls
Thank you

We realize this is difficult work and we appreciate your help and openness in improving the definitional process.