

# **CAN WE USE OPEN SOURCE LICENSES FOR ML/AI MODELS?**

Mary Hardy

Senior Corporate Counsel in  
Open Source, Standards, and  
Open Machine Learning at  
Microsoft

# MODEL LICENSES

<https://huggingface.co/models>, accessed  
9/22/2023



Hugging Face

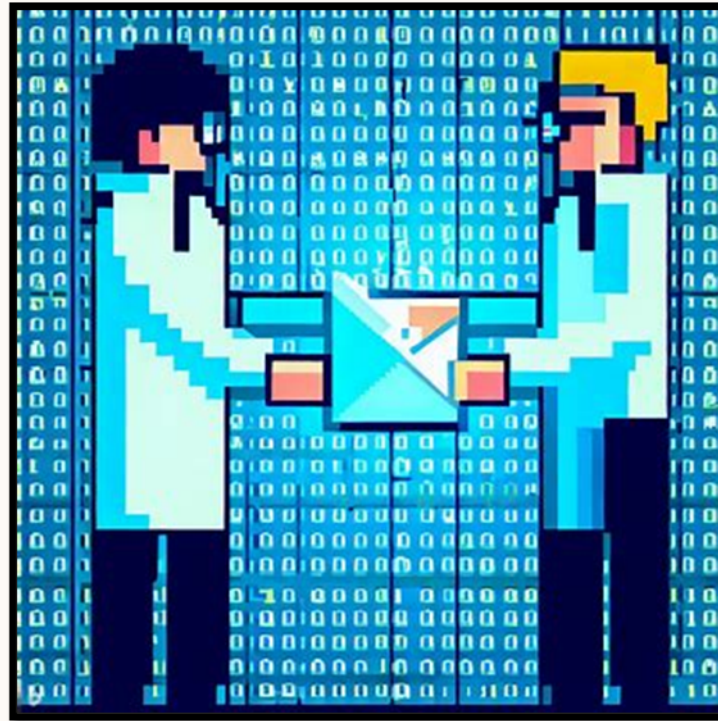
Search models, datasets, users...

Tasks Libraries Datasets Languages Licenses Other

Filter Licenses by name

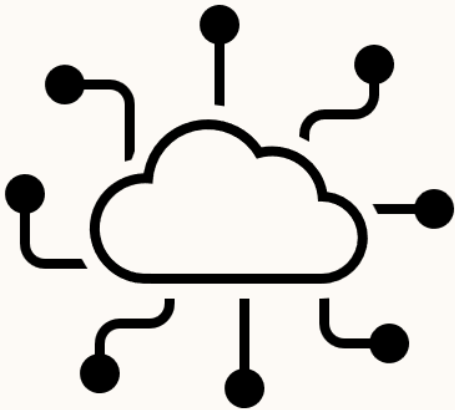
- apache-2.0 mit openrail
- creativeml-openrail-m other cc-by-4.0
- cc-by-nc-4.0 afl-3.0 llama2 cc-by-nc-sa-4.0
- gpl-3.0 cc-by-sa-4.0 cc bigscience-openrail-m
- openrail++ artistic-2.0 bsd-3-clause
- bigscience-bloom-rail-1.0 wtfpl cc-by-sa-3.0
- cc0-1.0 bigcode-openrail-m agpl-3.0
- unlicense gpl cc-by-nc-nd-4.0 bsd
- cc-by-3.0 gpl-2.0 bsl-1.0 cc-by-2.0
- bsd-2-clause lgpl-3.0 c-uda cc-by-nc-3.0
- cc-by-nc-2.0 osl-3.0 pddl ecl-2.0
- bsd-3-clause-clear cc-by-nd-4.0 ms-pl zlib
- gfdl lgpl cc-by-nc-sa-3.0 deepfloyd-if-license
- lgpl-1r mpl-2.0 cc-by-nc-sa-2.0 odbl isc
- cc-by-2.5 cc-by-nc-nd-3.0 odc-by eupl-1.1
- nlsa epl-2.0 lgpl-2.1 cdla-sharing-1.0
- postgresql epl-1.0 lppl-1.3c ofl-1.1
- cdla-permissive-1.0 tii-falcon-llm
- cdla-permissive-2.0

# OPEN SOURCE MACHINE LEARNING

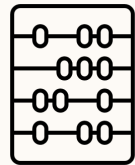


Microsoft Bing Image Creator, “a data scientist handing an envelope to another data scientist, pixel art”

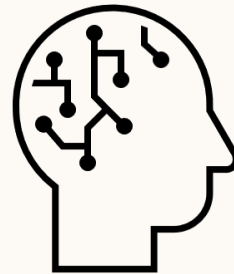
# ML CORE COMPONENTS



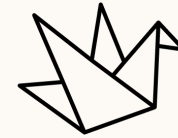
MODEL



MODEL PARAMETERS



TRAINING  
DATASET



EVALUATION  
DATASET

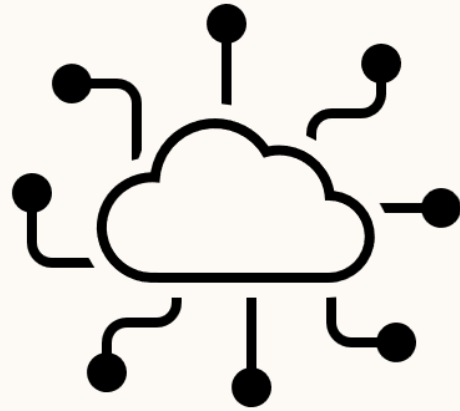


TRAINING  
CODE?



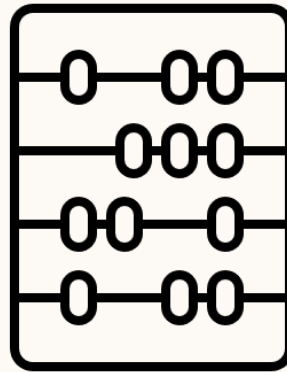
?

# WHAT IS A MODEL MADE OF?



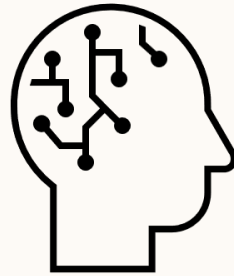
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# WHAT ARE WEIGHTS MADE OF?



MODEL PARAMETERS

# WHAT ARE DATASETS MADE OF?



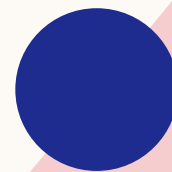
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# **OPEN SOURCE LICENSE REVIEW**



# APACHE-2.0 [January 2004]

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Work = work of authorship, whether in Source or Object form, made available under the License

Derivative Works = any work, whether in Source or Object form, that is based on (or derived from) the Work

Source = the preferred form for making modifications

Object = any form resulting from mechanical transformation or translation of a Source form

Source examples: “...software source code, documentation source, and configuration files.”

Object examples: “...compiled object code, generated documentation...”

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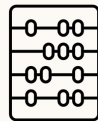
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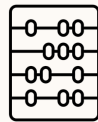
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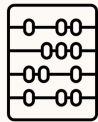
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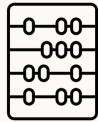
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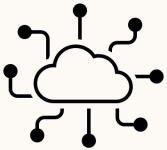


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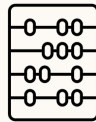
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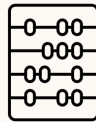
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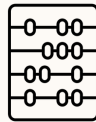
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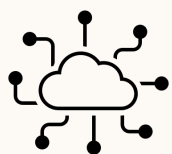
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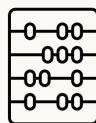
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Distribute object code or executable form? “Accompany it with the complete corresponding machine-readable source code”



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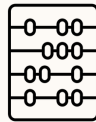
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Complete source code = all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable.



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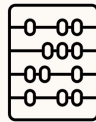
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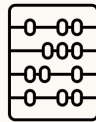
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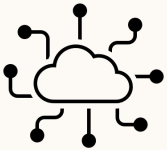
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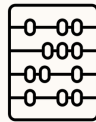
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Distribute object code? “...also convey the machine-readable Corresponding Source under the terms of this License.”



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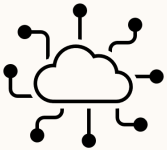
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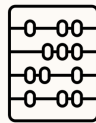
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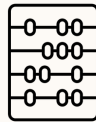
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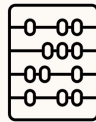
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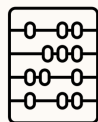
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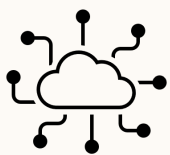


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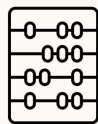
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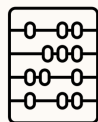
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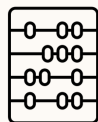
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Network hook: “made available as an application intended for use over a network”



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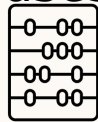
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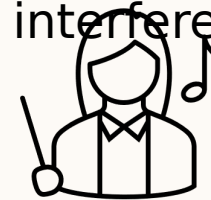
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# DO WE NEED A NEW OPEN SOURCE LICENSE FOR AI/ML COMPONENTS?

LICENSE PROLIFERATION BAD

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FALCON EXAMPLE

- Falcon 180B TII License Version 1.0 [September 2023]

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## LICENSE PROLIFERATION BAD

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“Object” form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, a trained and/or fine-tuned machine learning model or artificial intelligence model, generated documentation, and conversions to other media types.

## FALCON CASE STUDY, CONT.

“...use-based restrictions incorporating the Acceptable Use Policy in the manner set out in Section 5 of this license, and which do not otherwise conflict with the Acceptable Use Policy, must be included as enforceable provisions ...”

“The Acceptable Use Policy may be updated from time to time. You should monitor the web address at which the Acceptable Use Policy is hosted... ”



## MODEL/WEIGHTS CASE STUDY

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**THANK YOU**

