

openai/gpt-oss-20b

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Text Generation

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conversational

8-bit precision

mxfp4

arxiv:2508.10925

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Model card

Files and versions

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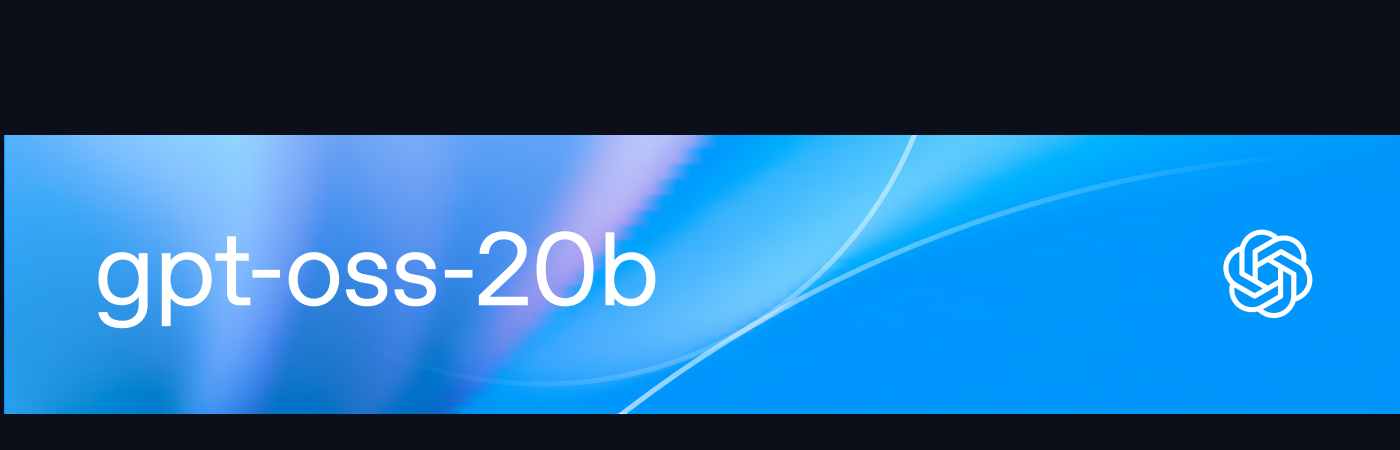
Community

146

Train

Deploy

Use this model



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Welcome to the gpt-oss series, OpenAI's open-weight models designed for powerful reasoning, agentic tasks, and versatile developer use cases.

We're releasing two flavors of these open models:

- gpt-oss-120b** — for production, general purpose, high reasoning use cases that fit into a single 80GB GPU (like NVIDIA H100 or AMD MI300X) (117B parameters with 5.1B active parameters)
- gpt-oss-20b** — for lower latency, and local or specialized use cases (21B parameters with 3.6B active parameters)

Both models were trained on our **harmony response format** and should only be used with the harmony format as it will not work correctly otherwise.

This model card is dedicated to the smaller **gpt-oss-20b** model. Check out **gpt-oss-120b** for the larger model.

Highlights

- Permissive Apache 2.0 license:** Build freely without copyleft restrictions or patent risk—ideal for experimentation, customization, and commercial deployment.
- Configurable reasoning effort:** Easily adjust the reasoning effort (low, medium, high) based on your specific use case and latency needs.
- Full chain-of-thought:** Gain complete access to the model's reasoning process, facilitating easier debugging and increased trust in outputs. It's not intended to be shown to end users.
- Fine-tunable:** Fully customize models to your specific use case through parameter fine-tuning.
- Agentic capabilities:** Use the models' native capabilities for function calling, **web browsing**, **Python code execution**, and Structured Outputs.
- MXFP4 quantization:** The models were post-trained with MXFP4 quantization of the MoE weights, making **gpt-oss-120b** run on a single 80GB GPU (like NVIDIA H100 or AMD MI300X) and the **gpt-oss-20b** model run within 16GB of memory. All evals were performed with the same MXFP4 quantization.

Inference examples

Transformers

You can use **gpt-oss-120b** and **gpt-oss-20b** with Transformers. If you use the Transformers chat template, it will automatically apply the **harmony response format**. If you use `model.generate` directly, you need to apply the harmony format manually using the chat template or use our **openai-harmony** package.

To get started, install the necessary dependencies to setup your environment:

```
pip install -U transformers kernels torch
```

Once, setup you can proceed to run the model by running the snippet below:

```
from transformers import pipeline
import torch

model_id = "openai/gpt-oss-20b"

pipe = pipeline(
    "text-generation",
    model=model_id,
    torch_dtype="auto",
    device_map="auto",
)

messages = [
    {"role": "user", "content": "Explain quantum mechanics clearly and concisely."},
]

outputs = pipe(
    messages,
    max_new_tokens=256,
)

print(outputs[0]["generated_text"][-1])
```

Alternatively, you can run the model via **Transformers Serve** to spin up a OpenAI-compatible webserver:

```
transformers serve
transformers chat localhost:8080 --model-name-or-path openai/gpt-oss-20b
```

Learn more about how to use gpt-oss with Transformers.

vLLM

vLLM recommends using **uv** for Python dependency management. You can use vLLM to spin up an OpenAI-compatible webserver. The following command will automatically download the model and start the server.

```
uv pip install --pre vllm==0.10.1+gptoss \
--extra-index-url https://wheels.vllm.ai/gpt-oss/ \
--extra-index-url https://download.pytorch.org/whl/nightly/cu128 \
--index-strategy unsafe-best-match

vllm serve openai/gpt-oss-20b
```

Learn more about how to use gpt-oss with vLLM.

PyTorch / Triton

To learn about how to use this model with PyTorch and Triton, check out our **reference implementations in the gpt-oss repository**.

Ollama

If you are trying to run gpt-oss on consumer hardware, you can use Ollama by running the following commands after **installing Ollama**.

```
# gpt-oss-20b
ollama pull gpt-oss:20b
ollama run gpt-oss:20b
```

Learn more about how to use gpt-oss with Ollama.

LM Studio

If you are using **LM Studio** you can use the following commands to download.

```
# gpt-oss-20b
lms get openai/gpt-oss-20b
```

Check out our **awesome list** for a broader collection of gpt-oss resources and inference partners.

Download the model

You can download the model weights from the **Hugging Face Hub** directly from Hugging Face CLI:

```
# gpt-oss-20b
huggingface-cli download openai/gpt-oss-20b --include "original/*" --local-dir gpt-oss-20b/
pip install gpt-oss
python -m gpt_oss.chat model/
```

Reasoning levels

You can adjust the reasoning level that suits your task across three levels:

- Low:** Fast responses for general dialogue.
- Medium:** Balanced speed and detail.
- High:** Deep and detailed analysis.

The reasoning level can be set in the system prompts, e.g., "Reasoning: high".

Tool use

The gpt-oss models are excellent for:

- Web browsing (using built-in browsing tools)
- Function calling with defined schemas
- Agentic operations like browser tasks

Fine-tuning

Both gpt-oss models can be fine-tuned for a variety of specialized use cases.

This smaller model **gpt-oss-20b** can be fine-tuned on consumer hardware, whereas the larger **gpt-oss-120b** can be fine-tuned on a single H100 node.

Citation

```
@misc{openai2025gptoss120bgptoss20bmodel,
  title={gpt-oss-120b & gpt-oss-20b Model Card},
  author={OpenAI},
  year={2025},
  eprint={2508.10925},
  archivePrefix={arXiv},
  primaryClass={cs.CL},
  url={https://arxiv.org/abs/2508.10925},
}
```



Safetensors

Model size

21.5B params

Tensor type

BF16 · U8

Chat template

Files info

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Fireworks

View API Code

Dismiss

with openai/gpt-oss-20b.

Send

View Code Snippets

Open Playground

Model tree for openai/gpt-oss-20b

Adapters	52 models
Finetunes	278 models
Merges	4 models
Quantizations	104 models

Spaces using openai/gpt-oss-20b

100

eduardgarcia/open_pt_llm_leaderboard

umint/ai

umint/searchgpt

openfree/OpenAI-gpt-oss

SustainabilityLabITGN/VayuChat

gradio-templates/chatbot

HPAI-BSC/TuRTLe-Leaderboard

merterbak/gpt-oss-20b-demo

VIDraft/gpt-oss-RAG

fdaudens/gpt-oss-news-agent

ArthT/openai-gpt-oss-20b

Tonic/SmolFactory

+ 88 Spaces

Collection including openai/gpt-oss-20b

gpt-oss

Collection

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