

GGUF is a new format introduced by the llama.cpp team on August 21st 2023. It is a replacement for GGML, which is no longer supported by llama.cpp.

Here is an incomplate list of clients and libraries that are known to support GGUF:

- <u>llama.cpp</u>. The source project for GGUF. Offers a CLI and a server option.
- <u>text-generation-webui</u>, the most widely used web UI, with many features and powerful extensions. Supports GPU acceleration.
- <u>KoboldCpp</u>, a fully featured web UI, with GPU accel across all platforms and GPU architectures. Especially good for story telling.
- <u>LM Studio</u>, an easy-to-use and powerful local GUI for Windows and macOS (Silicon), with GPU acceleration.
- <u>LoLLMS Web UI</u>, a great web UI with many interesting and unique features, including a full model library for easy model selection.
- <u>Faraday.dev</u>, an attractive and easy to use character-based chat GUI for Windows and macOS (both Silicon and Intel), with GPU acceleration.
- ctransformers, a Python library with GPU accel, LangChain support, and OpenAl-compatible Al server.
- <u>Ilama-cpp-python</u>, a Python library with GPU accel, LangChain support, and OpenAl-compatible API server.
- <u>candle</u>, a Rust ML framework with a focus on performance, including GPU support, and ease of use.

- AWQ model(s) for GPU inference.
- GPTQ models for GPU inference, with multiple quantisation parameter options.
- 2, 3, 4, 5, 6 and 8-bit GGUF models for CPU+GPU inference
- jeff zhao's original unquantised fp16 model in pytorch format, for GPU inference and for further conversions

⊘ Prompt template: ChatML

```
<|im_start|>system
{system_message}<|im_end|>
<|im_start|>user
{prompt}<|im_end|>
<|im_start|>assistant
```

⊘ Compatibility

These quantised GGUFv2 files are compatible with llama.cpp from August 27th onwards, as of commit <u>d0cee0d</u>

They are also compatible with many third party UIs and libraries - please see the list at the top of this README.

Explanation of quantisation methods

► Click to see details

⊘ Provided files

Name	Quant method	Bits	Size	Max RAM required	Use case
tinyllama-1.1b-1t- openorca.Q2 K.gguf	Q2_K	2	0.48 GB	2.98 GB	smallest, significant quality loss - not recommended for most purposes
tinyllama-1.1b-1t- openorca.Q3 K S.gguf	Q3_K_S	3	0.50 GB	3.00 GB	very small, high quality loss
tinyllama-1.1b-1t- openorca.Q3 K M.gguf	Q3_K_M	3	0.55 GB	3.05 GB	very small, high quality loss
tinyllama-1.1b-1t- openorca.Q3 K L.gguf	Q3_K_L	3	0.59 GB	3.09 GB	small, substantial quality loss
tinyllama-1.1b-1t- openorca.Q4 0.gguf	Q4_0	4	0.64 GB	3.14 GB	legacy; small, very high quality loss - prefer using Q3_K_M
tinyllama-1.1b-1t- openorca.Q4 K S.gguf	Q4_K_S	4	0.64 GB	3.14 GB	small, greater quality loss
tinyllama-1.1b-1t- openorca.Q4 K M.gguf	Q4_K_M	4	0.67 GB	3.17 GB	medium, balanced quality - recommended
tinyllama-1.1b-1t- openorca.Q5 0.gguf	Q5_0		0.77 GB	3.27 GB	legacy; medium, balanced quality - prefer using Q4_K_M
tinyllama-1.1b-1t- openorca.Q5 K S.gguf	Q5_K_S		0.77 GB	3.27 GB	large, low quality loss - recommended
tinyllama-1.1b-1t- openorca.Q5 K M.gguf	Q5_K_M		0.78 GB	3.28 GB	large, very low quality loss - recommended
tinyllama-1.1b-1t- openorca.Q6 K.gguf	Q6_K	6	0.90 GB	3.40 GB	very large, extremely low quality loss
tinyllama-1.1b-1t- openorca.Q8 0.gguf	Q8_0	8	1.17 GB	3.67 GB	very large, extremely low quality loss - not recommended

Note: the above RAM figures assume no GPU offloading. If layers are offloaded to the GPU, this will reduce RAM usage and use VRAM instead.

⊘ How to download GGUF files

Note for manual downloaders: You almost never want to clone the entire repo! Multiple different quantisation formats are provided, and most users only want to pick and download a single file.

The following clients/libraries will automatically download models for you, providing a list of available models to choose from:

• LM Studio

- LoLLMS Web UI
- Faraday.dev

⊘ In text-generation-webui

Under Download Model, you can enter the model repo: TheBloke/TinyLlama-1.1B-1T-OpenOrca-GGUF and below it, a specific filename to download, such as: tinyllama-1.1b-1t-openorca.Q4_K_M.gguf.

Then click Download.

$\ensuremath{\mathscr{O}}$ On the command line, including multiple files at once

I recommend using the huggingface-hub Python library:

```
pip3 install huggingface-hub
```

Then you can download any individual model file to the current directory, at high speed, with a command like this:

 $hugging face-cli\ download\ The Bloke/TinyLlama-1.1B-1T-OpenOrca-GGUF$

► More advanced huggingface-cli download usage

Make sure you are using 11ama.cpp from commit d0cee0d or later.

```
--temp 0.7 --repeat_penalty 1.1 -n -1 -p "<|im_start|>system\n{sys
```

Change -ng1 32 to the number of layers to offload to GPU. Remove it if you don't have GPU acceleration.

Change - c 2048 to the desired sequence length. For extended sequence models - eg 8K, 16K, 32K - the necessary RoPE scaling parameters are read from the GGUF file and set by llama.cpp automatically.

If you want to have a chat-style conversation, replace the -p <PROMPT> argument with -i -ins

For other parameters and how to use them, please refer to <u>the llama.cpp</u> <u>documentation</u>

∂ How to run in text-generation-webui

Further instructions here: text-generation-webui/docs/llama.cpp.md.

$\ensuremath{\mathscr{O}}$ How to run from Python code

You can use GGUF models from Python using the <u>llama-cpp-python</u> or <u>ctransformers</u> libraries.

 $\ensuremath{\mathscr{O}}$ How to load this model in Python code, using ctransformers

Ø First install the package

Run one of the following commands, according to your system:

```
# Base ctransformers with no GPU acceleration
pip install ctransformers
# Or with CUDA GPU acceleration
pip install ctransformers[cuda]
# Or with AMD ROCm GPU acceleration (Linux only)
CT_HIPBLAS=1 pip install ctransformers --no-binary ctransformers
# Or with Metal GPU acceleration for macOS systems only
CT_METAL=1 pip install ctransformers --no-binary ctransformers
```

⊘ Simple ctransformers example code

```
our system.

1.1b-1t-openorca.Q4_K_M.gguf", model_type="llama", gpu_layers=50)
```

∂ How to use with LangChain

Here are guides on using llama-cpp-python and ctransformers with LangChain:

- LangChain + llama-cpp-python
- LangChain + ctransformers

⊘ Discord

For further support, and discussions on these models and AI in general, join us at:

TheBloke AI's Discord server

Thanks to the $\underline{chirper.ai}$ team!

Thanks to Clay from gpus.llm-utils.org!

I've had a lot of people ask if they can contribute. I enjoy providing models and helping people, and would love to be able to spend even more time doing it, as well as expanding into new projects like fine tuning/training.

If you're able and willing to contribute it will be most gratefully received and will help me to keep providing more models, and to start work on new AI projects.

Donaters will get priority support on any and all AI/LLM/model questions and requests, access to a private Discord room, plus other benefits.

- Patreon: https://patreon.com/TheBlokeAl
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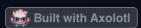
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⊘ Original model card: jeff zhao's Tinyllama 1.1B 1T Openorca



PY007/TinyLlama-1.1B-intermediate-step-480k-1T

Fine tuned on OpenOrca GPT4 subset for 1 epoch, Using CHATML format

⊘ Model License:

Apache 2.0, following the TinyLlama base model.

Hardware: 1*RTX A5000, ~16 hours to complete 1 epoch. GPU from autodl.com, cost around \$3 for this finetuning. https://wandb.ai/jeff200402/TinyLlama-Orca? workspace= for more details.



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