

Model usage instructions

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This tutorial mainly introduces some Raspberry Pi 500 system environments and models that can run on different RAM versions.

System image Description

The offline AI large model development tutorial for Raspberry Pi 500 can use the image already configured by Yahboom: Pi500_AI_Pure.img

System Information

user name: pi

password: yahboom

WiFi hotspot name: Pi500_Hot

WiFi hotspot password: 12345678

System environment

- Ollama
 - Qwen2
- Docker
- Open WebUI

Due to the limitation of SD (TF) card, we did not download all the models in the tutorial to the Pi500_AI_Pure.img image system, only the Qwen2 large model was retained. Users can delete and download other models by themselves.

Parameter Description

Raspberry Pi (8G RAM): Run 8B and below parameter models

Raspberry Pi (4G RAM): Run 3B and below parameter models

Raspberry Pi (2G RAM): Runs models with 0.5B or less parameters

The above conclusion may not be entirely accurate, but it can be used as a reference!

Ollama official website operation model description:
Run the 7B parameter model requires at least 8GB of available running memory.
Run the 13B parameter model with at least 16GB of available running memory.
Run the 33B parameter model with at least 32GB of available running memory.

Model Statistics

The following table shows common models based on the Ollama official website model library statistics.

Users can search for the desired models on the Ollama official website by themselves.

In theory, the larger the model parameters, the greater the memory required, and running the model can choose versions with smaller parameters to experience the functionality

Model	Parameter	Raspberry Pi 5B (2G RAM)	Raspberry Pi 5B (4G RAM)	Raspberry Pi 5B (8G RAM)	Raspberry Pi 500 (8G RAM)	Running command
Llama 3	7B	Not support	Not support	Support	Support	ollama run llama3:8b
Llama 2 Chinese	7B	Not support	Not support	Support	Support	ollama run llama2-chinese:7b
Qwen2	0.5B	Support	Support	Support	Support	ollama run qwen2:0.5b
Qwen2	1.5B	Not support	Support	Support	Support	ollama run qwen2:1.5b
Qwen2	7B	Not support	Not support	Support	Support	ollama run qwen2:7b
Phi-3	3.8B	Not support	Not support	Support	Support	ollama run phi3:3.8b
Phi-2	2.7B	Not support	Support	Support	Support	ollama run phi:2.7b
Gemma	2B	Not support	Support	Support	Support	ollama run gemma:2b
Gemma	7B	Not support	Not support	Support	Support	ollama run gemma:7b
LLaVA	7B	Not support	Not support	Support	Support	ollama run llava:7b
WizardLM-2	7B	Not support	Not support	Support	Support	ollama run wizardlm2:7b
DeepSeek Coder	1.3B	Not support	Support	Support	Support	ollama run deepseek-coder:1.3b
DeepSeek Coder	6.7B	Not support	Not support	Support	Support	ollama run deepseek-coder:6.7b
Yi	6B	Not support	Not support	Support	Support	ollama run yi:6b

Reference material

Website: <https://ollama.com/>

GitHub: <https://github.com/ollama/ollama>