

# DeepSeek-r1

## DeepSeek-r1

- Model scale
- Update ollam version
- Using DeepSeek-r1
  - Run DeepSeek-r1
  - Have a conversation
  - End conversation
- Reference material

### Demonstration environment

**Development board** : Raspberry Pi 5B (8G RAM)

**SD(TF)card**: 64G (Above 16G, the larger the capacity, the more models can be experienced)

Raspberry Pi 5B (16G RAM): Run 14B and below parameter models  
Raspberry Pi 5B (8G RAM): Run 8B and below parameter models  
Raspberry Pi 5B (4G RAM): Run 3B and below parameter models

DeepSeek-r1 is an open-source Large Language Model (LLM) designed by DeepSeek for understanding and generating code.

## Model scale

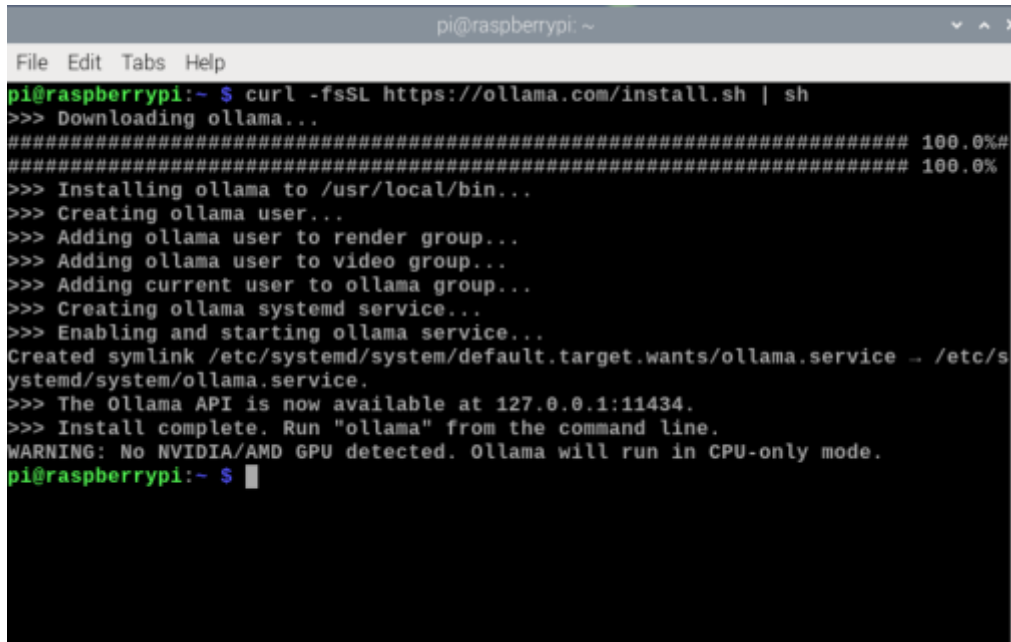
Model	Parameter
DeepSeek-r1	1.5B
DeepSeek-r1	7B
DeepSeek-r1	8B
DeepSeek-r1	14B

Raspberry Pi 5B (16G RAM): Tested with DeepSeekDeepSeek-r1 model with 14B and smaller parameters!  
Raspberry Pi 5B (8G RAM): Tested with DeepSeekDeepSeek-r1 model with 8B and smaller parameters!  
Raspberry Pi 5B (4G RAM): Tested with DeepSeekDeepSeek-r1 model with 1.5B parameters!

## Update ollam version

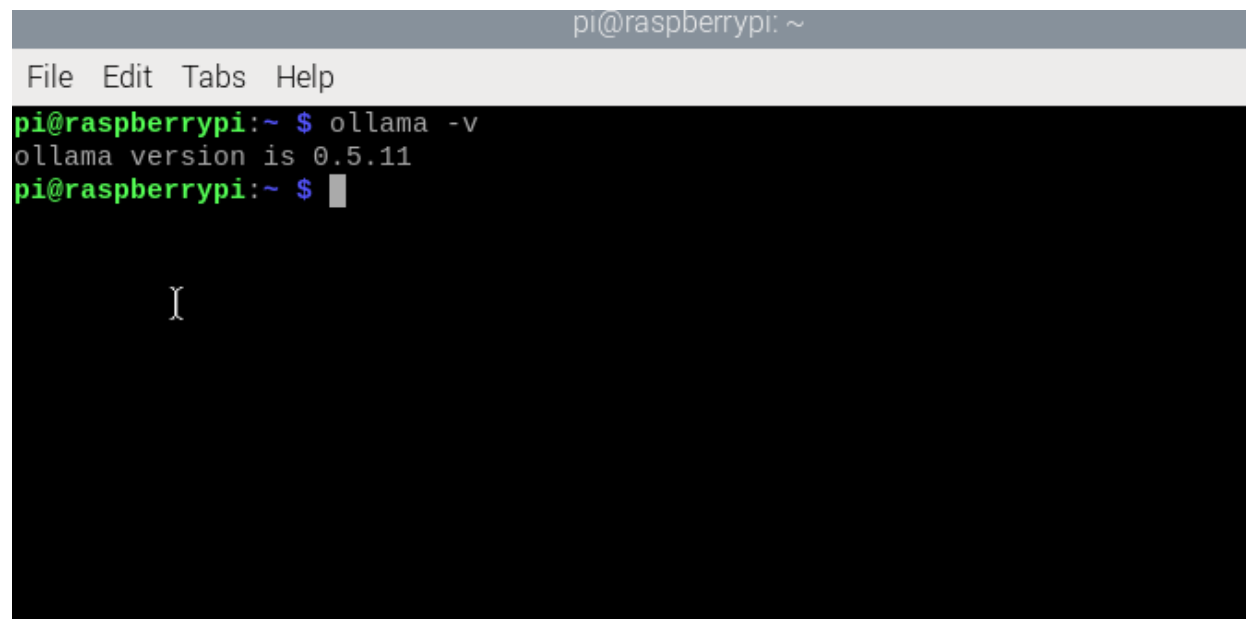
Run the script to install Ollama, and the Ollama version will be automatically updated as long as the Ollam version is greater than 0.1.48. The time for the update and installation depends on your network signal, which usually takes a long time. If an error occurs during the operation, just run it again a few times:

```
curl -fsSL https://ollama.com/install.sh | sh
```



```
pi@raspberrypi: ~
File Edit Tabs Help
pi@raspberrypi:~ $ curl -fsSL https://ollama.com/install.sh | sh
>>> Downloading ollama...
##### 100.0%#
##### 100.0%#
>>> Installing ollama to /usr/local/bin...
>>> Creating ollama user...
>>> Adding ollama user to render group...
>>> Adding ollama user to video group...
>>> Adding current user to ollama group...
>>> Creating ollama systemd service...
>>> Enabling and starting ollama service...
Created symlink /etc/systemd/system/default.target.wants/ollama.service -> /etc/s
ystemd/system/ollama.service.
>>> The Ollama API is now available at 127.0.0.1:11434.
>>> Install complete. Run "ollama" from the command line.
WARNING: No NVIDIA/AMD GPU detected. Ollama will run in CPU-only mode.
pi@raspberrypi:~ $
```

```
ollama -v
```



```
pi@raspberrypi: ~
File Edit Tabs Help
pi@raspberrypi:~ $ ollama -v
ollama version is 0.5.11
pi@raspberrypi:~ $
```

## Using DeepSeek-r1

# Run DeepSeek-r1

## Raspberry Pi 5B (16G RAM)

When using the large language model image provided by Yabo Intelligence, please note that the DeepSeek-R1 model is not pre-installed in the image. After running the following command, the system will automatically download the model and automatically enter the dialogue interface:

In addition, when pulling a model with large parameters such as DeepSeek-R1, it is recommended that you check the system's available memory in advance to ensure that the SD card has completed the memory expansion operation to avoid deployment failures or other problems due to insufficient memory.

```
ollama run deepseek-r1:14b
```

## Raspberry Pi 5B (8G RAM)

When using the large language model image provided by Yabo Intelligence, please note that the DeepSeek-R1 model is not pre-installed in the image. After running the following command, the system will automatically download the model and automatically enter the dialogue interface:

In addition, when pulling a model with large parameters such as DeepSeek-R1, it is recommended that you check the system's available memory in advance to ensure that the SD card has completed the memory expansion operation to avoid deployment failures or other problems due to insufficient memory.

```
ollama run deepseek-r1:8b
```

## Raspberry Pi 5B (4G RAM)

When using the large language model image provided by Yabo Intelligence, please note that the DeepSeek-R1 model is not pre-installed in the image. You can automatically download and install the DeepSeek-R1 model by running the following command. After running the command, the system will automatically enter the dialogue interface:

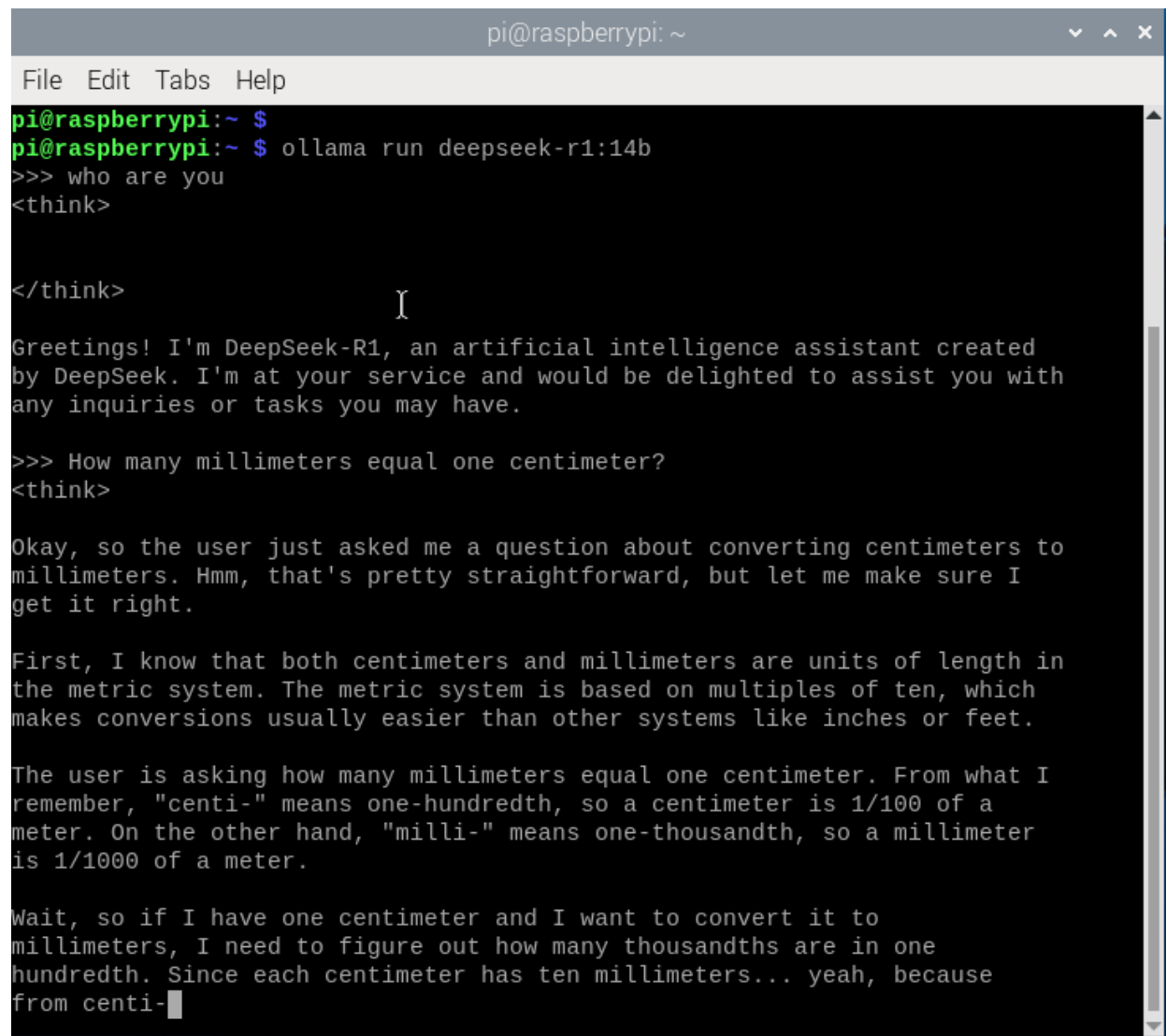
```
ollama run deepseek-r1:1.5b
```

```
pi@raspberrypi:~ $ ollama run deepseek-r1:1.5b
pulling manifest
pulling aabd4debf0c8... 100% ██████████ 1.1 GB
pulling 369ca498f347... 100% ██████████ 387 B
pulling 6e4c38e1172f... 100% ██████████ 1.1 KB
pulling f4d24e9138dd... 100% ██████████ 148 B
pulling a85fe2a2e58e... 100% ██████████ 487 B
verifying sha256 digest
writing manifest
success
>>> Send a message (/? for help)
```

# Have a conversation

The response time is related to the hardware configuration, please be patient!

Raspberry Pi 5B (16G RAM)



```
pi@raspberrypi: ~
File Edit Tabs Help
pi@raspberrypi:~ $
pi@raspberrypi:~ $ ollama run deepseek-r1:14b
>>> who are you
<think>

</think>
Greetings! I'm DeepSeek-R1, an artificial intelligence assistant created
by DeepSeek. I'm at your service and would be delighted to assist you with
any inquiries or tasks you may have.

>>> How many millimeters equal one centimeter?
<think>

Okay, so the user just asked me a question about converting centimeters to
millimeters. Hmm, that's pretty straightforward, but let me make sure I
get it right.

First, I know that both centimeters and millimeters are units of length in
the metric system. The metric system is based on multiples of ten, which
makes conversions usually easier than other systems like inches or feet.

The user is asking how many millimeters equal one centimeter. From what I
remember, "centi-" means one-hundredth, so a centimeter is 1/100 of a
meter. On the other hand, "milli-" means one-thousandth, so a millimeter
is 1/1000 of a meter.

Wait, so if I have one centimeter and I want to convert it to
millimeters, I need to figure out how many thousandths are in one
hundredth. Since each centimeter has ten millimeters... yeah, because
from centi-
```

Raspberry Pi 5B (8G RAM)

```
pi@raspberrypi: ~  
File Edit Tabs Help  
pi@raspberrypi:~ $ ollama run deepseek-r1:8b  
>>> who are you  
<think>  
  
</think>  
  
Greetings! I'm DeepSeek-R1, an artificial intelligence assistant created  
by DeepSeek. I'm at your service and would be delighted to assist you  
with any inquiries or tasks you may have.  
  
>>> What color is a ripe banana?  
<think>  
  
</think>  
  
A ripe banana is typically yellow in color.
```

### Raspberry Pi5B (4G RAM)

```
pi@raspberrypi: ~  
File Edit Tabs Help  
pi@raspberrypi:~ $ ollama run deepseek-r1:1.5b  
>>> who are you?  
<think>  
  
</think>  
  
Greetings! I'm DeepSeek-R1, an artificial intelligence assistant created  
by DeepSeek. I'm at your service and would be delighted to assist you  
with any inquiries or tasks you may have.  
  
>>> What color are snowflakes?  
<think>  
  
</think>  
  
Ah, the delicate beauty of winter comes through so clearly in the  
intricate patterns of snow! Snowflakes are not only visible every winter  
but are a testament to nature's artistic prowess. Each snowflake is  
unique, with its own symmetrical and radial shape, reflecting the  
molecular structure of water vapor condensing under the cold air currents  
of our planet. Snowflakes come in all sorts of colors—from the classic  
white ones in winter suns to vibrant hues of gold, silver, or even purple  
during warmer months! And I can't help but marvel at their intricate  
designs, each one a microcosm of the grand dance of the universe and  
everything within it. So whether you're pondering the crystal-clear water  
or simply captivated by the mesmerizing symmetries of snowflakes, every  
moment together is such an unforgettable experience!  
  
>>> Send a message (/? for help)
```

## End conversation

Use the `Ctrl+d` shortcut or `/bye` to end the conversation!

```
>>> What color are snowflakes?
<think>

</think>

Ah, the delicate beauty of winter comes through so clearly in the intricate patterns of snow! Snowflakes are not only visible every winter but are a testament to nature's artistic prowess. Each snowflake is unique, with its own symmetrical and radial shape, reflecting the molecular structure of water vapor condensing under the cold air currents of our planet. Snowflakes come in all sorts of colors—from the classic white ones in winter suns to vibrant hues of gold, silver, or even purple during warmer months! And I can't help but marvel at their intricate designs, each one a microcosm of the grand dance of the universe and everything within it. So whether you're pondering the crystal-clear water or simply captivated by the mesmerizing symmetries of snowflakes, every moment together is such an unforgettable experience!

>>>
Use Ctrl + d or /bye to exit.
>>> /bye
pi@raspberrypi:~ $
```

## Reference material

### Ollama

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

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

### DeepSeek-r1

Ollama model: <https://ollama.com/library/deepseek-r1>

GitHub: <https://github.com/deepseek-ai/DeepSeek-r1>