

# Janus-Pro香橙派开发板实践指南

## 前序

2025 年春节，AI 领域再掀波澜！DeepSeek的Janus-Pro 模型横空出世，以创新的双路径架构以及强大的多模态交互能力，引发业界广泛关注。

为了让更多开发者能够快速上手，我们基于昇思MindSpore AI框架和MindSpore NLP套件在香橙派AIpro（20T）24G开发板上，部署了Janus-Pro 模型，希望通过我们的努力，能够为 AI 社区的发展贡献一份力量，让更多人能够参与到 AI 的浪潮中来，以下是详细的Janus-Pro部署教程。

开源链接：<https://gitee.com/mindspore-lab/mindnlp.git>

## 环境配置

### MindSpore安装(2.5.0版)

首先设置Ascend相关的环境变量

```
echo "source /usr/local/Ascend/ascend-toolkit/set_env.sh" >> ~/.bashrc
source ~/.bashrc
```

在安装mindspore之前需要安装mindspore依赖包，在终端中运行：

```
pip config set global.index-url
https://pypi.tuna.tsinghua.edu.cn/simple
pip install sympy
pip install /usr/local/Ascend/ascend-toolkit/latest/lib64/te-*-py3-
none-any.whl
pip install /usr/local/Ascend/ascend-toolkit/latest/lib64/hccl-*-py3-
none-any.whl
```

安装完成后开始安装mindspore 2.5.0版本，进入MindSpore官网：

[https://www.mindspore.cn/。](https://www.mindspore.cn/)

版本

2.5.02.4.10master (Nightly build)

硬件平台

AscendCPUGPU

CANN版本

CANN 8.0.0CANN 8.0.RC3CANN 8.0.RC2

操作系统

Linux-aarch64Linux-x86\_64Windows-x64MacOS-aarch64MacOS-x86\_64

编程语言

Python 3.9Python 3.10Python 3.11

安装方式

PipCondaSourceDocker

安装命令

```
pip install https://ms-release.obs.cn-north-4.myhuaweicloud.com/2.5.0/MindSpore/unified/aarch64/mindspore-2.5.0-cp39-cp39-linux_aarch64.whl --trusted-host ms-release.obs.cn-north-4.myhuaweicloud.com -i https://pypi.tuna.tsinghua.edu.cn/simple
# 参考下方安装指南，添加运行所需的环境变量配置
# 请注意：安装MindSpore需要访问公网，如果您处于内网环境，请确保网络连接配置正确
```

选择对应的MindSpore、Python、CANN版本（本次安装配置和截图一致）。然后将安装命令复制到命令行执行即可。

mindspore安装完成后，执行下面命令验证是否安装成功。

```
python -c "import mindspore;mindspore.set_context(device_target='Ascend');mindspore.run_check()"
```

应该输出如下结果：

```
(py39) HwHiAiUser@orangeipiaipro-20t:~/Downloads$ python -c "import mindspore;mindspore.set_context(device_target='Ascend');mindspore.run_check()"
/home/HwHiAiUser/.conda/envs/py39/lib/python3.9/site-packages/numpy/core/getlimits.py:549: UserWarning: The value of the smallest subnormal for <class 'numpy.float64'> type is zero.
  setattr(self, word, getattr(machar, word).flat[0])
/home/HwHiAiUser/.conda/envs/py39/lib/python3.9/site-packages/numpy/core/getlimits.py:89: UserWarning: The value of the smallest subnormal for <class 'numpy.float64'> type is zero.
  return self._float_to_str(self.smallest_subnormal)
/home/HwHiAiUser/.conda/envs/py39/lib/python3.9/site-packages/numpy/core/getlimits.py:549: UserWarning: The value of the smallest subnormal for <class 'numpy.float32'> type is zero.
  setattr(self, word, getattr(machar, word).flat[0])
/home/HwHiAiUser/.conda/envs/py39/lib/python3.9/site-packages/numpy/core/getlimits.py:89: UserWarning: The value of the smallest subnormal for <class 'numpy.float32'> type is zero.
  return self._float_to_str(self.smallest_subnormal)
MindSpore version: 2.4.10
[WARNING] GE_ADPT(60181,e7ff177ef120,python):2025-02-13-14:51:55.176.113 [mindspore/ccsrc/transform/acl_ir/op_api_exec.cc:141] GetAscendDefaultCustomPath] Checking whether the so exists or if permission to access it is available: /usr/local/Ascend/ascend-toolkit/latest/opp/vendors/customize/op_api/lib/libcust_opapi.so
The result of multiplication calculation is correct, MindSpore has been installed on platform [Ascend] successfully!
```

## MindSpore NLP安装

请注意以下所有命令均在HwHiAiUser用户下运行

首先下载MindSpore NLP的代码，这里对janus做了适配，终端中执行以下命令从源码安装MindSpore NLP：

```
cd ~
git clone https://gitee.com/mindspore-lab/mindnlp.git
```

```
cd mindnlp
git checkout janus
pip install -e .
```

## 运行案例

案例运行需要设置swap，请检查是否设置了swap，运行

```
free -m
```

如果显示swap大小为0则未设置。

使用以下命令进行设置（默认密码为 Mind@123 ）

```
sudo fallocate -l 16G /swapfile
sudo chmod 600 /swapfile
sudo mkswap /swapfile
sudo swapon /swapfile
echo '/swapfile none swap sw 0 0' | sudo tee -a /etc/fstab
```

运行图像理解任务，在终端中输入：

```
pip install attrdict
cd ~/mindnlp/llm/inference/janus_pro
python understanding.py
```

这里示例的输入图像为：



运行结果为：

```
Terminal - HwHiAiUser@orangepiaipro-20t: ~/janus-pro-mindspore
File Edit View Terminal Tabs Help
Decode Layer
Decode Layer
You are a helpful language and vision assistant. You are able to understand the
visual content that the user provides, and assist the user with a variety of tas
ks using natural language.

<|User|>: <image_placeholder>
describe this image

<|Assistant|>: The image depicts a majestic cat sitting on a rocky terrain with
a stunning mountain landscape in the background. The cat has a rich, golden-brow
n fur with darker markings on its face and ears. The mountains in the background
are covered with lush greenery and snow-capped peaks, creating a picturesque an
d serene scene. The sky above is partly cloudy, with patches of blue peeking thr
ough, adding to the overall tranquil and natural ambiance of the image.
(py39) HwHiAiUser@orangepiaipro-20t:~/janus-pro-mindspore$ free -m
```

运行图像生成任务，在终端中输入：

```
python generation.py
```

输入prompt为： A stunning princess from kabul in red, white traditional  
clothing, blue eyes, brown hair

在 ~/mindnlp/llm/inference/janus\_pro/generated\_samples 目录下生成图像:

