

2.11 Image classification algorithm

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1. Operation mode
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The `test_mobilenetv1.py` program has been installed on the development board to test the functionality of the MobileNet v1 image classification algorithm. The program reads static images from `zebra_cls.jpg` as input to the model and outputs the classification result `CLS id: 340` confidence: 0.991851 on the command line terminal.

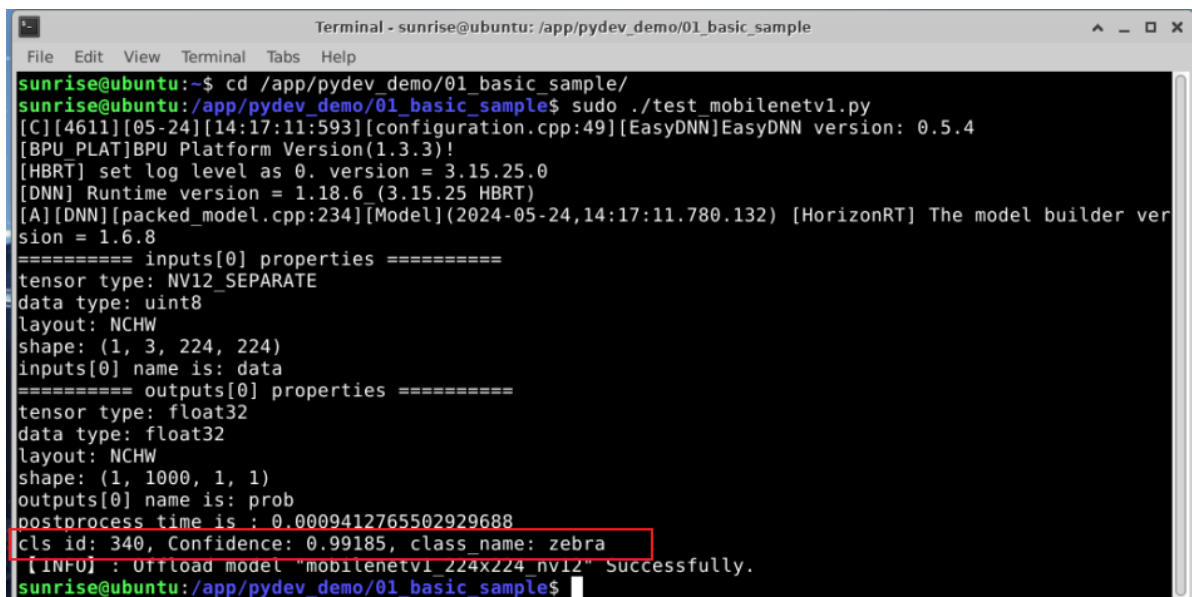
1. Operation mode

Execute the program `test_mobilenetv1.py`

Program path: `/app/pydev_demo/01.basic_sample/`

```
sunrise@ubuntu:~$ cd /app/pydev_demo/01_basic_sample/  
sunrise@ubuntu:/app/pydev_demo/01_basic_sample$ sudo ./test_mobilenetv1.py
```

2. Result



```
Terminal - sunrise@ubuntu: /app/pydev_demo/01_basic_sample  
File Edit View Terminal Tabs Help  
sunrise@ubuntu:~$ cd /app/pydev_demo/01_basic_sample/  
sunrise@ubuntu:/app/pydev_demo/01_basic_sample$ sudo ./test_mobilenetv1.py  
[C][4611][05-24][14:17:11:593][configuration.cpp:49][EasyDNN]EasyDNN version: 0.5.4  
[BPU PLAT]BPU Platform Version(1.3.3)!  
[HBRT] set log level as 0. version = 3.15.25.0  
[DNN] Runtime version = 1.18.6 (3.15.25 HBRT)  
[A][DNN][packed_model.cpp:234][Model](2024-05-24,14:17:11.780.132) [HorizonRT] The model builder ver  
sion = 1.6.8  
===== inputs[0] properties =====  
tensor type: NV12_SEPARATE  
data type: uint8  
layout: NCHW  
shape: (1, 3, 224, 224)  
inputs[0] name is: data  
===== outputs[0] properties =====  
tensor type: float32  
data type: float32  
layout: NCHW  
shape: (1, 1000, 1, 1)  
outputs[0] name is: prob  
postprocess time is : 0.0009412765502929688  
cls id: 340, Confidence: 0.99185, class_name: zebra  
[INFO] : Offload model "mobilenetv1_224x224_nv12" Successfully.  
sunrise@ubuntu:/app/pydev_demo/01_basic_sample$
```

Output the prediction results, ID, and confidence of the image classification algorithm.

`zebra_cls.jpg` is an image of a zebra. According to the classification of the ImageNet dataset, the returned result ID is 340 and the confidence level is 0.991851.

```
===== Classification result =====  
cls id: 340 Confidence: 0.991851
```

