RK1808 AI Compute Stick Easy-Start Demo Guide

V1.2.1

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1 Introduction

There is an easy-start AI application demo built-in the RK1808 AI Compute Stick. Users only need to execute a script to run an AI application on the host (YOLOv3 object detection).

1.1 Supported platform

1.1.1 x86_64 MacOS

1. MacOSX: Verison >= 10.12. Users should install python3.6.8 before running the script. Download from http://repo.rock-chips.com/python/python-3.6.8-macosx10.9.pkg

1.1.2 x86_64 Linux

1. Ubuntu 18.04：Run directly.

2. Ubuntu 19.04：Default python version is3.7，rknn-toolkit does not supports python3.7 for now. Users should install python3.5 or python3.6 before running the script, before install python3.5 or 3.6, you must execute sudo apt install -y libssl-dev libsqlite3-dev in shell.

3. Debian 9.9：sudo is default not installed on Debian，the script need sudo to install some packages. Users should install sudo before running the script.

4. Deepin 15.10.1：Run directly.

5. Fedora 28：Run directly.

6. Fedora 29/30：Default python version is3.7，rknn-toolkit does not supports python3.7 for now. Users should install python3.5 or python3.6 before running the script.

1.1.3 aarch64 Linux

1. RK3399 Fedora 28：Run directly.

2. RK3399Pro Fedora 28：Run directly.

1.1.4 x86_64 Windows

1. Win7&Win10：Install python3.6.8 manually.

2. Win7&Win10：Refer to
    "Rockchip_RK1808_AI_Compute_Stick_User_manual_EN.pdf " to install ntb
    driver.

1.2 Notes

1.2.1 For MacOS

1. Probably many packages will be installed after running the script. Please wait patiently.

1.2.2 For Linux

2. Probably many packages will be installed after running the script. Please wait patiently.

3. Some python packages such as onnx/scipy/tensorflow will be downloaded and
    installed after running the script on RK3399 or RK3399Pro. Please wait patiently.

4. Special Attention: since RK3399Pro comes with internal NPU, the script will stop the
    internal NPU service of RK3399Pro before running demo. If you need to reuse the
    RK3399Pro internal NPU, please restart the RK3399Pro device.

5. On RK3399 and RK3399Pro platforms, there may be some error logs when the demo
    is running(related to OpenCV), but it will not affect the demo operation. Please wait

patiently for the camera image interface to come out.

6. Easy start demo can run in the default python3 environment directly, if the python3 environment have been changed on user system, the operation may report error.

1.2.3 For Windows

1. You should better reboot after install python 3.6.8.

2. Some python packages such as onnx/scipy/tensorflow will be downloaded and installed after running the script. Please wait patiently.

3. The virtual python environment of rknn_win_env will be generated in the current directory, and the demo will run in the virtual python environment of virtualenv.

2 Operation introduction

2.1 MacOS

Refers to Linux.

2.2 Linux

1. Plug RK1808 AI compute stick into the host. If the host does not have a camera, one USB camera is required and the host must be with display device.

2. After inserting the compute stick, the host will pop up a usb flash disk device. Since there is no execution authority in the usb flash disk device, it is necessary to copy the corresponding files from the usb flash disk device for operation:

   mkdir   ~/rk1808_stick/

   Enter U disk directory：

   cp   example/   ~/rk1808_stick/   -r

3. Run the easy-start script in GUI, then the graphic and inference result will be displayed in screen:

   cd   ~/rk1808_stick/example

   chmod   +x   run_demo.sh
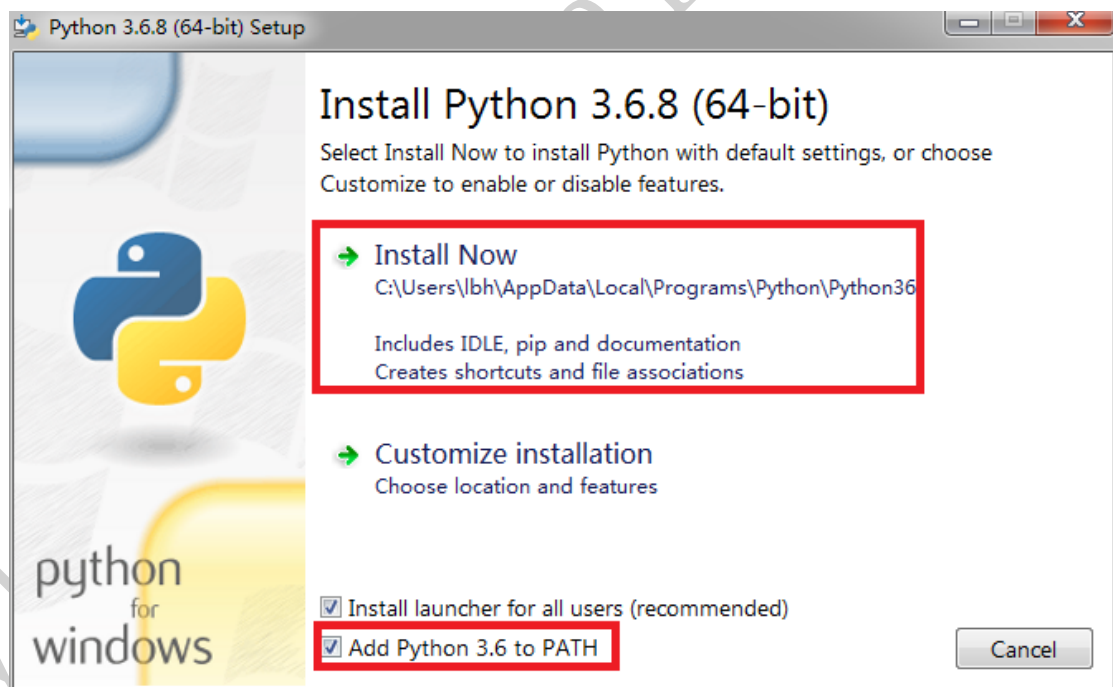
   ./run_demo.sh

2.3 Windows

1. Install python 3.6.8 from https://www.python.org/downloads/release/python-368/ .

Files

Version	Operating System	Description
Gzipped source tarball	Source release	
XZ compressed source tarball	Source release	
macOS 64-bit/32-bit installer	Mac OS X	for Mac OS X 10.6 and later
macOS 64-bit installer	Mac OS X	for OS X 10.9 and later
Windows help file	Windows	
Windows x86-64 embeddable zip file	Windows	for AMD64/EM64T/x64
Windows x86-64 executable installer	Windows	for AMD64/EM64T/x64
Windows x86-64 web-based installer	Windows	for AMD64/EM64T/x64
Windows x86 embeddable zip file	Windows	
Windows x86 executable installer	Windows	
Windows x86 web-based installer	Windows	

2. You must check the "Add Python 3.6 to PATH" option，or you may can't run python and pip3 command.

3. Plug RK1808 AI compute stick into the host. If the host does not have a camera, one USB camera is required and the host must be with display device.

4. After inserting the compute stick, the host will pop up a usb flash disk device. Since there is no execution authority in the usb flash disk device, it is necessary to copy all

files from the usb flash disk device for operation:

5. Double-click example/run_demo.bat on the host to run easy start demo, then the graphic and inference result will be displayed in screen.

3 Exception Handling

3.1 Windows

A. **Message:**   ..\tool\wget.exe is needed. Please copy tool directory from RK1808.

   Solution: wget.exe in tool directory is required, you should copy tool directory to host machine.

B. **Message:**   python not found. Please install python 3.6.8 first or check your PATH setting.

   Solution: reinstall python3.6.8

C. **Message:**   pip not found. Please install python 3.6.8 first or check your PATH setting.

   Solution: reinstall python3.6.8

D. **Message:**   x.x.x is not support.   Please install python 3.6.8 first.

   Solution: reinstall python3.6.8

E. **Message:**

```
Python 3.6.8
Looking in indexes: http://pypi.douban.com/simple
Collecting virtualenv
  Downloading http://pypi.doubanio.com/packages/c4/9a/a3f62ac5122a65dec34ad4b5ed8d802633dae4bc06a0fc62e55fe3e96fe1/virtu
alenv-16.6.1-py2.py3-none-any.whl (2.0MB)
    100% |████████████████████████████████| 2.0MB 937kB/s
Installing collected packages: virtualenv
  The script virtualenv.exe is installed in 'C:\Users\1jh\AppData\Roaming\Python\Python36\Scripts' which is not on PATH.

  Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.
Successfully installed virtualenv-16.6.1
'virtualenv' 不是内部或外部命令, 也不是可运行的程序
或批处理文件。
请按任意键继续
```

Solution: You python may be not install in default directory, you have two solutions.

   No.1   reinstall python3.6.8 in default directory.

   No.2   modify pip config

      a)   Open cmd window, type "python -m site -help" to check site.py position.

b) From above we know that site.py is in "C:\Program Files\Python36\lib\site.py".

c) Modify site.py. (according to your actual python path)

USER_SITE = "C:\Program Files\Python36\lib\site-packages"

USER_BASE = "C:\Program Files"

F. **Message:**

Solution: Run run_demo.bat with administrator privileges.