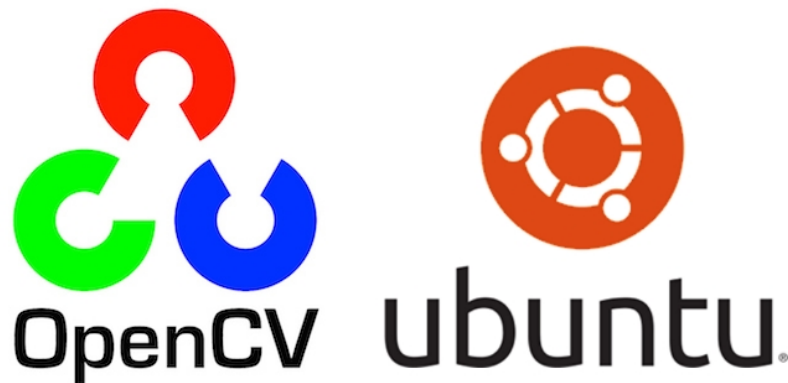


# 1. Install Open Source CV for environment construction

---

OpenCV is an Intel® open source computer vision library. It consists of a series of C functions and a small number of C++ classes that implement many common algorithms in image processing and computer vision. OpenCV has a cross-platform mid- and high-level API that includes more than 300 C functions. It has no dependencies on other external libraries - although some can be used. OpenCV is free for both non-commercial and commercial applications.



As a basic open source project for computer vision, image processing and pattern recognition, OpenCV can be directly applied to many fields and serves as an ideal tool for second development. In particular, the new version of OpenCV provides a large number of Python interfaces, which greatly simplifies the calling of OpenCV functions, allowing users to more conveniently use OpenCV to implement various functions.

opencv official website: <https://opencv.org/>

It has the following characteristics:

- (1) Open C/C++ source code
- (2) Optimized code developed based on Intel processor instruction set
- (3) Unified structure and function definition
- (4) Powerful image and matrix operation capabilities
- (5) Convenient and flexible user interface
- (6) Supports MS-WINDOWS and LINUX platforms at the same time

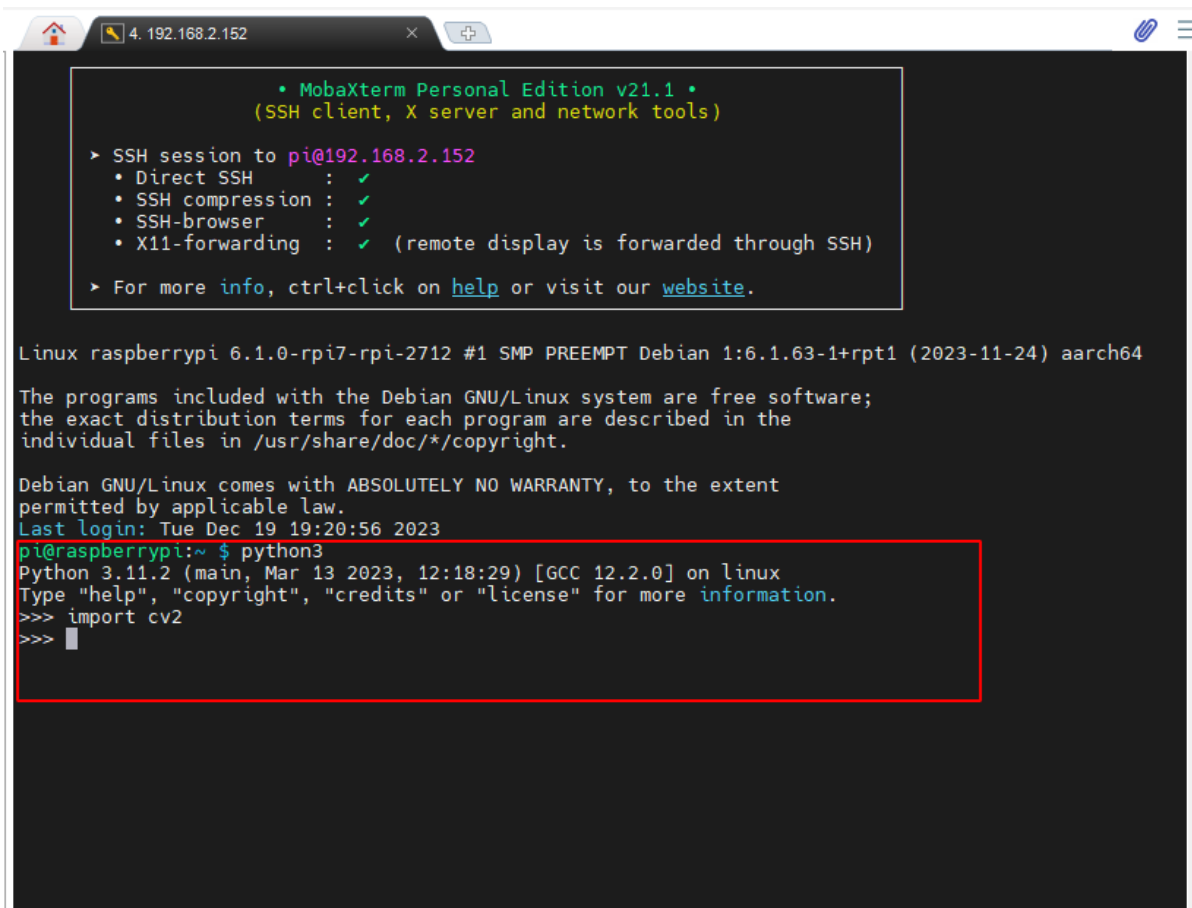
**This tutorial uses command installation.** Source code installation is also possible, but it will take a little longer.

The installation command is as follows:

```
sudo apt-get install python3-opencv
```

When you see the following picture, the installation is complete.





```
• MobaXterm Personal Edition v21.1 •
(SSH client, X server and network tools)

> SSH session to pi@192.168.2.152
  • Direct SSH      : ✓
  • SSH compression : ✓
  • SSH-browser     : ✓
  • X11-forwarding  : ✓ (remote display is forwarded through SSH)

> For more info, ctrl+click on help or visit our website.

Linux raspberrypi 6.1.0-rpi7-rpi-2712 #1 SMP PREEMPT Debian 1:6.1.63-1+rpt1 (2023-11-24) aarch64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Tue Dec 19 19:20:56 2023
pi@raspberrypi:~ $ python3
Python 3.11.2 (main, Mar 13 2023, 12:18:29) [GCC 12.2.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import cv2
>>> █
```