在Vscode 中配置OpenCV

预编译版本(推荐)

第一步：在命令行输入sudo apt install libopencv-dev

```
zyf@DESKTOP-J04PE8M:~$ sudo apt install libopencv     -dev
[sudo] password for zyf:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libopencv-core4.2 libtbb-dev libtbb2
Suggested packages:
  libtbb-doc
The following NEW packages will be installed:
  libopencv-core-dev libopencv-core4.2 libtbb-dev libtbb2
0 upgraded, 4 newly installed, 0 to remove and 83 not upgraded.
Need to get 3113 kB of archives.
After this operation, 18.7 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu focal/universe amd64 libtbb2 amd64 2020.1-2 [124 kB]
Get:2 http://archive.ubuntu.com/ubuntu focal/universe amd64 libopencv-core4.2 amd64 4.2.0+dfsg-5 [1027 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal/universe amd64 libtbb-dev amd64 2020.1-2 [273 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal/universe amd64 libopencv-core-dev amd64 4.2.0+dfsg-5 [1690 kB]
Fetched 3113 kB in 5s (640 kB/s)
Selecting previously unselected package libtbb2:amd64.
(Reading database ... 38336 files and directories currently installed.)
Preparing to unpack .../libtbb2_2020.1-2_amd64.deb ...
Unpacking libtbb2:amd64 (2020.1-2) ...
Selecting previously unselected package libopencv-core4.2:amd64.
Preparing to unpack .../libopencv-core4.2_4.2.0+dfsg-5_amd64.deb ...
Unpacking libopencv-core4.2:amd64 (4.2.0+dfsg-5) ...
```

第二步：

1. 使用dpkg -L libopencv-dev查看是否安装成功

```
zyf@DESKTOP-J04PE8M:~$ dpkg -L libopencv     -dev
/.
/usr
/usr/include
/usr/include/opencv4
/usr/include/opencv4/opencv2
/usr/include/opencv4/opencv2/core
/usr/include/opencv4/opencv2/core/affine.hpp
/usr/include/opencv4/opencv2/core/async.hpp
/usr/include/opencv4/opencv2/core/base.hpp
/usr/include/opencv4/opencv2/core/bindings_utils.hpp
/usr/include/opencv4/opencv2/core/bufferpool.hpp
/usr/include/opencv4/opencv2/core/check.hpp
```

2. 使用pkg-config --libs opencv4查看是否安装pkgConfig以及pkgConfig是否链接到opencv4

```
cuiyusong@DESKTOP-TABG61S:~$ pkg-config --libs opencv4
-lopencv_stitching -lopencv_aruco -lopencv_bgsegm -lopencv_bioinspired -lopencv_ccali
b -lopencv_dnn_objdetect -lopencv_dnn_superres -lopencv_dpm -lopencv_highgui -lopencv
_face -lopencv_freetype -lopencv_fuzzy -lopencv_hdf -lopencv_hfs -lopencv_img_hash -l
opencv_line_descriptor -lopencv_quality -lopencv_reg -lopencv_rgbd -lopencv_saliency
-lopencv_shape -lopencv_stereo -lopencv_structured_light -lopencv_phase_unwrapping -l
opencv_superres -lopencv_optflow -lopencv_surface_matching -lopencv_tracking -lopencv
_datasets -lopencv_text -lopencv_dnn -lopencv_plot -lopencv_ml -lopencv_videostab -lo
pencv_videoio -lopencv_viz -lopencv_ximgproc -lopencv_video -lopencv_xobjdetect -lope
ncv_objdetect -lopencv_calib3d -lopencv_imgcodecs -lopencv_features2d -lopencv_flann
-lopencv_xphoto -lopencv_photo -lopencv_imgproc -lopencv_core
```

第三步：将opencv添加到include路径(以vscode为例)

1. 搜索edit configuration并打开
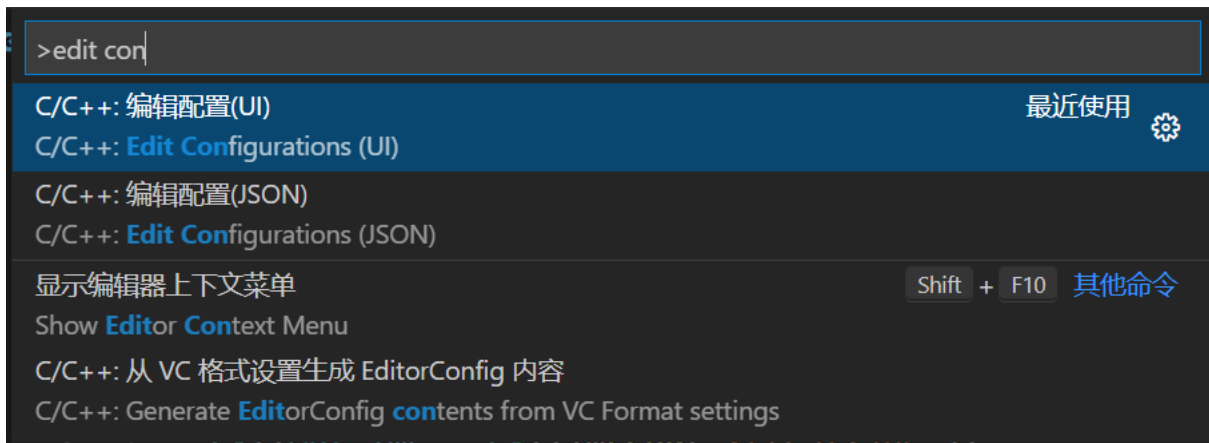
2. 添加路径 '/usr/include/opencv4/opencv2/' 和 '/usr/include/opencv4/'

第四步：编译测试

```
#include <opencv2/opencv.hpp>

// # define _GLIBCXX_USE_CXX11_ABI 0

int main()
{
    cv::Mat img = cv::imread("./test.jpg");
    cv::imshow("gril", img);
    cv::waitKey();
    return 0;
}
```

```cpp
1    #include <opencv2/opencv.hpp>
2
3    // # define _GLIBCXX_USE_CXX11_ABI 0
4
5    int main()
6    {
7        cv::Mat img = cv::imread("./test.jpg");
8        cv::imshow("gril", img);
9        cv::waitKey();
10       return 0;
11   }
```

g++ main.cpp `pkg-config --cflags --libs opencv4`
链接到opencv4

```
zyf@DESKTOP-J04PE8M:~$ g++ main.cpp `pkg-config --cflags --libs opencv4`
```

或者可以链接到指定库函数

```
zyf@DESKTOP-J04PE8M:~$ g++ main.cpp -lopencv_core -lopencv_highgui -lopencv_imgcodecs
```

能打开测试图即为成功

```
/usr/include/opencv4/opencv2/core/utils/trace.hpp
/usr/include/opencv4/opencv2/core/va_intel.hpp
/usr/include/opencv4/opencv2/core/version.hpp
/usr/include/opencv4/opencv2/core/vsx_utils.hpp
/usr/include/opencv4/opencv2/core.hpp
/usr/include/opencv4/opencv2/cvconfig.h
/usr/include/opencv4/opencv2/opencv.hpp
/usr/include/opencv4/opencv2/opencv_modules.hpp
/usr/lib
/usr/lib/x86_64-linux-gnu
/usr/lib/x86_64-linux-gnu/libopencv_core.a
/usr/share
/usr/share/doc
/usr/share/doc/libopencv-core-dev
/usr/share/doc/libopencv-core-dev/README.Debian
/usr/share/doc/libopencv-core-dev/copyright
/usr/lib/x86_64-linux-gnu/libopencv_core.so
/usr/share/doc/libopencv-core-dev/changelog.Debian.gz
zyf@DESKTOP-J04PE8M:~$ ./a.out
^Z
[6]+  Stopped                 ./a.out
zyf@DESKTOP-J04PE8M:~$ ./a.out
```
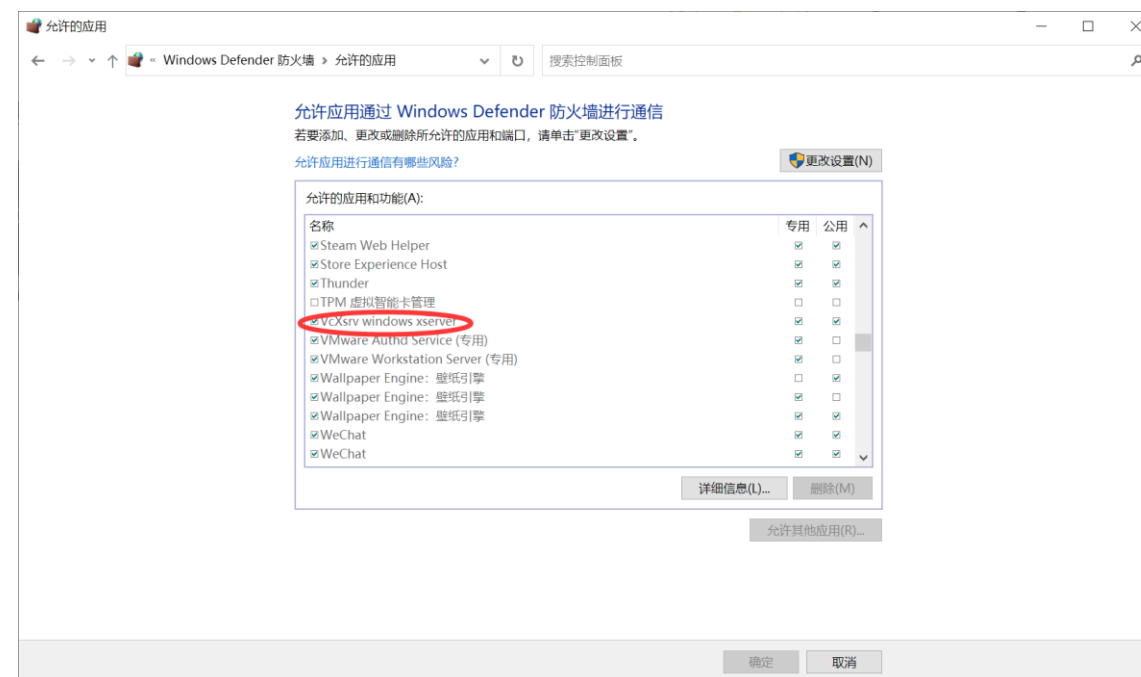

若不能打开，继续第五步

1. 出现如图所示错误，下载VcXsrv：https://sourceforge.net/projects/vcxsrv/ 并按照默认配置安装。


```
zyf@DESKTOP-J04PE8M:~$ ./a.out
Unable to init server: Could not connect: Connection refused

(gril:26614): Gtk-WARNING **: 16:56:11.518: cannot open display:
```
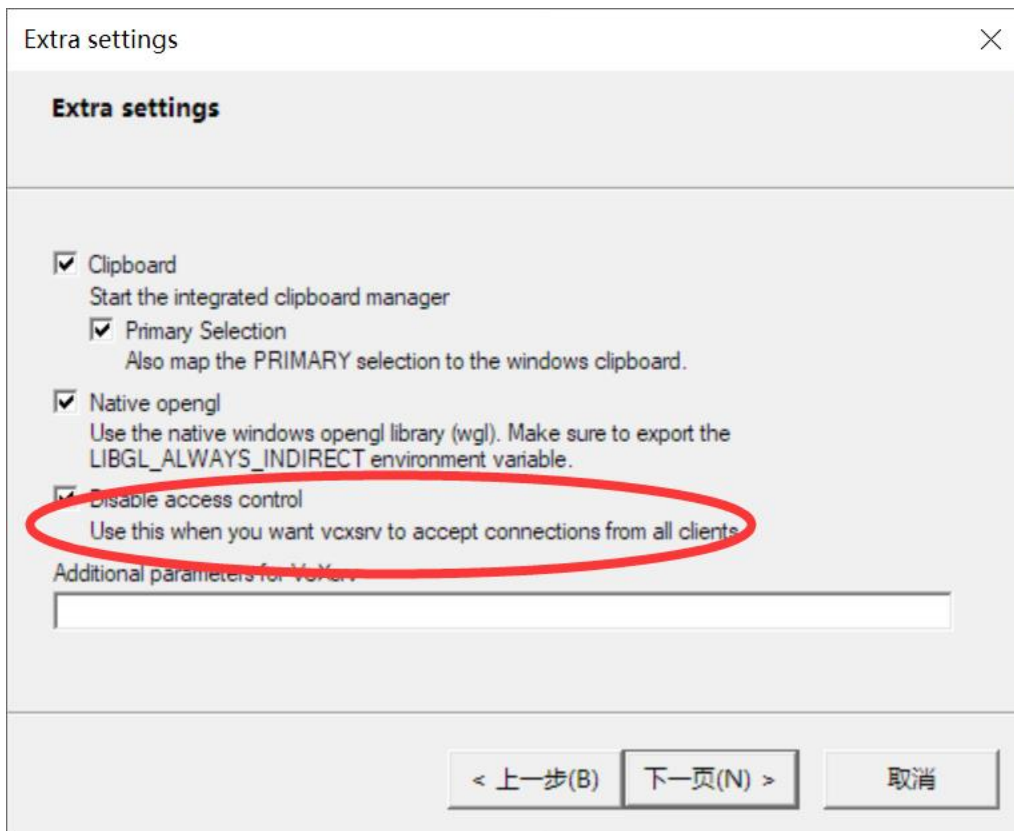
2. 打开Windows防火墙，允许VcXsrv通过：

3. 打开VcXsrv，在配置时选中disable access control

4. 打开cmd输入ipconfig查看本机在wsl中的ip并复制下来

```
以太网适配器 vEthernet (WSL):

   连接特定的 DNS 后缀 . . . . . . . . :
   本地链接 IPv6 地址. . . . . . . . . : fe80::f17a:a393:1bde:6a76%45
   IPv4 地址 . . . . . . . . . . . . . : 172.17.48.1
   子网掩码  . . . . . . . . . . . . . : 255.255.240.0
   默认网关. . . . . . . . . . . . . . :
```

5. 打开~/.zshrc 或者~/.bashrc，如果都没有就随意创建一个

```
zyf@DESKTOP-J04PE8M:~$ ls -a
.   ..   .bash_history   .bash_logout   .bashrc
```

5. 在文件末尾加入export DISPLAY=[your ip address]:0，保存退出，用source .bashrc刷新bash设置

```
if ! shopt -oq posix; then
  if [ -f /usr/share/bash-completion/bash_completion ]; then
    . /usr/share/bash-completion/bash_completion
  elif [ -f /etc/bash_completion ]; then
    . /etc/bash_completion
  fi
fi


export DISPLAY=172.17.48.1:0
```

6. 重新编译运行刚刚的代码
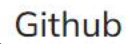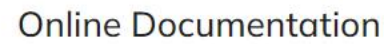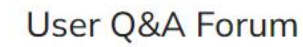
自编译版本

https://opencv.org

The AI Model Marketplace by OpenCV

Visit The Site

Github

Online Documentation

Tutorials

User Q&A Forum

Courses

Wiki

Build Farm
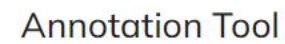
Annotation Tool

Report A Bug

Donate

在这里输入你要搜索的内容

36℃
CPU温度

英
23:13
2021/11/15

https://github.com/opencv/opencv
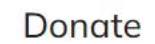
<> Code   Issues 1.9k   Pull requests 99   Wiki   Security   Insights

4.x   6 branches   112 tags   Go to file   Code ▾

alalek Merge remote-tracking branch 'upstream/3.4' into merge-3.4   ✓ 394e640 2 days ago   🕐 31,168 commits

📁 .github	Merge remote-tracking branch 'upstream/3.4' into merge-3.4		10 months ago
📁 3rdparty	Merge pull request #20998 from alalek:update_protobuf_3.19.1		5 days ago
📁 apps	Merge pull request #21020 from lukasalexanderweber:squash		7 days ago
📁 cmake	Merge remote-tracking branch 'upstream/3.4' into merge-3.4		16 days ago
📁 data	fix files permissions		2 years ago
📁 doc	fix markers parse in gen_pattern.py		5 days ago
📁 include	exclude opencv_contrib modules		2 years ago
📁 modules	Merge remote-tracking branch 'upstream/3.4' into merge-3.4		2 days ago
📁 platforms	Merge remote-tracking branch 'upstream/3.4' into merge-3.4		last month
📁 samples	Merge remote-tracking branch 'upstream/3.4' into merge-3.4		2 days ago
📄 .editorconfig	add .editorconfig		3 years ago
📄 .gitattributes	cmake: generate and install ffmpeg-download.ps1		4 years ago
📄 .gitignore	Merge pull request #17165 from komakai:objc-binding		2 years ago
📄 CMakeLists.txt	Merge remote-tracking branch 'upstream/3.4' into merge-3.4		16 days ago
📄 CONTRIBUTING.md	migration: github.com/opencv/opencv		5 years ago

About

Open Source Computer Vision Library

🔗 opencv.org

opencv   c-plus-plus   computer-vision

deep-learning   image-processing

📖 Readme

⚖ View license

Releases 56

🏷 OpenCV 4.5.4 Latest
on 10 Oct

+ 55 releases

Download OpenCV 4.5.4 version

Contributors 1,335

+ 1,324 contributors

Wget从网上下载命令，从http://github.com/opencv中下载opencv源文件
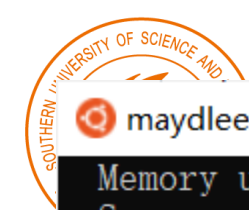
```
Memory usage: 0%                    IPv4 address for eth0: 172.17.125.26
Swap usage:   0%

155 updates can be installed immediately.
69 of these updates are security updates.
To see these additional updates run: apt list --upgradable


The list of available updates is more than
To check for new updates run: sudo apt upda


This message is shown once once a day. To disable it
/home/maydlee/.hushlogin file.
maydlee@LAPTOP-U1MO0N2F:~$ ls
hello.cpp
maydlee@LAPTOP-U1MO0N2F:~$ wget https://github.com/opencv/opencv/archive/refs/tags/4.5.4.tar.gz
--2021-11-15 20:33:29--  https://github.com/opencv/opencv/archive/refs/tags/4.5.4.tar.gz
Resolving github.com (github.com)... 20.205.243.166, 205.251.197.3, 198.51.45.8, ...
Connecting to github.com (github.com)|20.205.243.166|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://codeload.github.com/opencv/opencv/tar.gz/refs/tags/4.5.4 [following]
--2021-11-15 20:33:29--  https://codeload.github.com/opencv/opencv/tar.gz/refs/tags/4.5.4
Resolving codeload.github.com (codeload.github.com)... 20.205.243.165, 205.251.197.3, 198.51.45.8, ...
Connecting to codeload.github.com (codeload.github.com)|20.205.243.165|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [application/x-gzip]
Saving to: '4.5.4.tar.gz'

4.5.4.tar.gz                    [                  <=>                  ]   7.48M  1.60MB/s
```

```
maydlee@LAPTOP-U1MO0N2F: ~                                    —   □   ✕

The list of available updates is more than a week old.
To check for new updates run: sudo apt update


This message is shown once once a day. To disable it please create the
/home/maydlee/.hushlogin file.
maydlee@LAPTOP-U1MO0N2F:~$ ls
hello.cpp
maydlee@LAPTOP-U1MO0N2F:~$ wget https://github.com/opencv/opencv/archive/refs/tags/4.5.4.tar.gz
--2021-11-15 20:33:29--  https://github.com/opencv/opencv/archive/refs/tags/4.5.4.tar.gz
Resolving github.com (github.com)... 20.205.243.166, 205.251.197.3, 198.51.45.8, ...
Connecting to github.com (github.com)|20.205.243.166|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://codeload.github.com/opencv/opencv/tar.gz/refs/tags/4.5.4 [following]
--2021-11-15 20:33:29--  https://codeload.github.com/opencv/opencv/tar.gz/refs/tags/4.5.4
Resolving codeload.github.com (codeload.github.com)... 20.205.243.165, 205.251.197.3, 198.51.45.8, ...
Connecting to codeload.github.com (codeload.github.com)|20.205.243.165|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [application/x-gzip]
Saving to: '4.5.4.tar.gz'

4.5.4.tar.gz                [        <=>                    ]  85.57M  14.5MB/s    in 18s

2021-11-15 20:33:48 (4.63 MB/s) - '4.5.4.tar.gz' saved [89724634]

maydlee@LAPTOP-U1MO0N2F:~$ ls
4.5.4.tar.gz   hello.cpp              下载到根目录下
maydlee@LAPTOP-U1MO0N2F:~$
```

```
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVComponent/pch.h
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml.sln
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/App.xaml
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/App.xaml.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/AlignmentGrid.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/ApplicationIcon.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Lena.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/FlipCycleTileLarge.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/FlipCycleTileMedium.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/FlipCycleTileSmall.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/IconicTileMediumLarge.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/IconicTileSmall.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/LocalizedStrings.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/MainPage.xaml
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/MainPage.xaml.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/OpenCVXaml.csproj
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Properties/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Properties/AppManifest.xml
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Properties/AssemblyInfo.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Properties/WMAppManifest.xml
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Resources/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Resources/AppResources.Designer.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Resources/AppResources.resx
opencv-4.5.4/samples/wp8/readme.txt
maydlee@LAPTOP-U1MO0N2F:~$ ls
4.5.4.tar.gz   hello.cpp   opencv-4.5.4
maydlee@LAPTOP-U1MO0N2F:~$ tar zxvf 4.5.4.tar.gz
```

https://blog.csdn.net/laobai1015/article/details/89405905

解压tar.gz文件

使用命令：**tar –zxvf** 文件名

```
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/App.xaml.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/AlignmentGrid.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/ApplicationIcon.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Lena.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/FlipCycleTileLarge.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/FlipCycleTileMedium.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/FlipCycleTileSmall.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/IconicTileMediumLarge.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Assets/Tiles/IconicTileSmall.png
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/LocalizedStrings.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/MainPage.xaml
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/MainPage.xaml.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/OpenCVXaml.csproj
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Properties/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Properties/AppManifest.xml
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Properties/AssemblyInfo.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Properties/WMAppManifest.xml
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Resources/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Resources/AppResources.Designer.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Resources/AppResources.resx
opencv-4.5.4/samples/wp8/readme.txt
maydlee@LAPTOP-U1MO0N2F:~$ ls
4.5.4.tar.gz   hello.cpp   opencv-4.5.4
maydlee@LAPTOP-U1MO0N2F:~$ cd opencv-4.5.4/
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ ls
3rdparty         CONTRIBUTING.md   LICENSE      SECURITY.md   cmake   doc        modules     samples
CMakeLists.txt   COPYRIGHT         README.md    apps          data    include    platforms
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$
```

解压的文件在opencv-4.5.4文件夹中

https://docs.opencv.org/4.x/d7/d9f/tutorial_linux_install.html

```
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Properties/WMAppManifest.xml
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Resources/
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Resources/AppResources.Designer.cs
opencv-4.5.4/samples/wp8/OpenCVXaml/OpenCVXaml/Resources/AppResources.resx
opencv-4.5.4/samples/wp8/readme.txt
maydlee@LAPTOP-U1MO0N2F:~$ ls
4.5.4.tar.gz  hello.cpp  opencv-4.5.4
maydlee@LAPTOP-U1MO0N2F:~$ cd opencv-4.5.4/
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ ls
3rdparty         CONTRIBUTING.md  LICENSE      SECURITY.md  cmake  doc      modules    samples
CMakeLists.txt   COPYRIGHT        README.md    apps         data   include  platforms
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ mkdir -p build
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ cd build
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ ls
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ cmake ../
.editorconfig    CONTRIBUTING.md  README.md      build/     doc/       platforms/
3rdparty/        COPYRIGHT        SECURITY.md    cmake/     include/   samples/
CMakeLists.txt   LICENSE          apps/          data/      modules/
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ cd ..
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ ls
3rdparty         CONTRIBUTING.md  LICENSE      SECURITY.md  build  data   include  platforms
CMakeLists.txt   COPYRIGHT        README.md    apps         cmake  doc    modules  samples
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ cd build
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ cmake build ..
-- The CXX compiler identification is GNU 9.3.0
-- The C compiler identification is GNU 9.3.0
-- Check for working CXX compiler: /usr/bin/c++
-- Check for working CXX compiler: /usr/bin/c++ -- works
-- Detecting CXX compiler ABI info
```

```
-- Performing Test HAVE_CXX_WNO_ARRAY_BOUNDS
-- Performing Test HAVE_CXX_WNO_ARRAY_BOUNDS - Success
-- Performing Test HAVE_CXX_WNO_EXTRA
-- Performing Test HAVE_CXX_WNO_EXTRA - Success
-- Performing Test HAVE_CXX_WNO_DEPRECATED_DECLARATIONS
-- Performing Test HAVE_CXX_WNO_DEPRECATED_DECLARATIONS - Success
-- Performing Test HAVE_CXX_WNO_MISLEADING_INDENTATION
-- Performing Test HAVE_CXX_WNO_MISLEADING_INDENTATION - Success
-- Performing Test HAVE_CXX_WNO_DEPRECATED
-- Performing Test HAVE_CXX_WNO_DEPRECATED - Success
-- Performing Test HAVE_CXX_WNO_SUGGEST_OVERRIDE
-- Performing Test HAVE_CXX_WNO_SUGGEST_OVERRIDE - Success
-- Performing Test HAVE_CXX_WNO_INCONSISTENT_MISSING_OVERRIDE
-- Performing Test HAVE_CXX_WNO_INCONSISTENT_MISSING_OVERRIDE - Failed
-- Performing Test HAVE_CXX_WNO_IMPLICIT_FALLTHROUGH
-- Performing Test HAVE_CXX_WNO_IMPLICIT_FALLTHROUGH - Success
-- Performing Test HAVE_CXX_WNO_TAUTOLOGICAL_COMPARE
-- Performing Test HAVE_CXX_WNO_TAUTOLOGICAL_COMPARE - Success
-- Performing Test HAVE_CXX_WNO_REORDER
-- Performing Test HAVE_CXX_WNO_REORDER - Success
-- Performing Test HAVE_CXX_WNO_UNUSED_RESULT
-- Performing Test HAVE_CXX_WNO_UNUSED_RESULT - Success
-- Performing Test HAVE_CXX_WNO_IMPLICIT_CONST_INT_FLOAT_CONVERSION
-- Performing Test HAVE_CXX_WNO_IMPLICIT_CONST_INT_FLOAT_CONVERSION - Failed
-- Performing Test HAVE_CXX_WNO_CLASS_MEMACCESS
-- Performing Test HAVE_CXX_WNO_CLASS_MEMACCESS - Success
-- libva: missing va.h header (VA_INCLUDE_DIR)
-- IPPICV: Download: ippicv_2020_lnx_intel64_20191018_general.tgz
-- Try 1 failed
CMake Warning at cmake/OpenCVDownload.cmake:202 (message):
  IPPICV: Download failed: 28;"Timeout was reached"

  For details please refer to the download log file:

  /home/maydlee/opencv-4.5.4/build/CMakeDownloadLog.txt

Call Stack (most recent call first):
  3rdparty/ippicv/ippicv.cmake:37 (ocv_download)
  cmake/OpenCVFindIPP.cmake:259 (download_ippicv)
  cmake/OpenCVFindLibsPerf.cmake:12 (include)
  CMakeLists.txt:727 (include)


-- Could not find OpenBLAS include. Turning OpenBLAS_FOUND off
-- Could not find OpenBLAS lib. Turning OpenBLAS_FOUND off
-- Could NOT find Atlas (missing: Atlas_CBLAS_INCLUDE_DIR Atlas_CLAPACK_INCLUDE_DIR Atlas_CBLAS_LIBRARY Atlas_BLAS_LIBRARY Atlas_LAPACK_LIBRARY)
-- Looking for sgemm_
-- Looking for sgemm_ - not found
-- Found Threads: TRUE
```

一般情况下，下载ippicv_2020_lnx_intel64_20191018_general.tagz会失败，只能从其他地方下载好，复制到目的目录中

選擇maydlee@LAPTOP-U1MO0N2F: ~/opencv-4.5.4/.cache/ippicv

```
maydlee@LAPTOP-U1MO0N2F:/mnt/c/Users/liaoqm/Documents/WeChat Files/wxid_yuexwskp8m9u12/FileStorage/File/2021-11$ cp
2021.11.9关于进一步加强近期疫情防控工作的通知.pdf  ippicv_2020_lnx_intel64_20191018_general(1).tgz
maydlee@LAPTOP-U1MO0N2F:/mnt/c/Users/liaoqm/Documents/WeChat Files/wxid_yuexwskp8m9u12/FileStorage/File/2021-11$ cp ippi
cv_2020_lnx_intel64_20191018_general\(1\).tgz ~/opencv-4.5.4/.cache/ippicv/7421de0095c7a39162ae13a6098782f9-ippicv_2020_
lnx_intel64_20191018_general.tgz
maydlee@LAPTOP-U1MO0N2F:/mnt/c/Users/liaoqm/Documents/WeChat Files/wxid_yuexwskp8m9u12/FileStorage/File/        cd ~
maydlee@LAPTOP-U1MO0N2F:~$ ls
4.5.4.tar.gz  hello.cpp  opencv-4.5.4
maydlee@LAPTOP-U1MO0N2F:~$ cd opencv-4.5.4/
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ ls
3rdparty            CONTRIBUTING.md  LICENSE      SE
CMakeLists.txt  COPYRIGHT             README.md    apps
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ cd .cache/
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/.cache$ ls
ade  ippicv
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/.cache$ cd ippicv/
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/.cache/ippicv$ ls
7421de0095c7a39162ae13a6098782f9-ippicv_2020_lnx_intel64_20191018_general.tgz
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/.cache/ippicv$
```

cp是拷贝命令，拷贝ippicv_2020_lnx_intel64_2019018_general\(\l).tgz
到根目录的opencv-4.5.4/.cache/ippicv…目录下

Create build directory
mkdir -p build && cd build
创建build文件夹，以便后续将cmake运行的文件都放在build文件夹中

Build
cmake --build .   make -j4

```
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/own/last_written_value_tests.cpp.o
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/own/mat_tests.cpp.o
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/own/scalar_tests.cpp.o
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/render/ftp_render_test.cpp.o
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/render/gapi_render_tests_ocv.cpp.o
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/rmat/rmat_integration_tests.cpp.o
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/rmat/rmat_tests.cpp.o
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/rmat/rmat_view_tests.cpp.o
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/s11n/gapi_s11n_tests.cpp.o
[ 98%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/s11n/gapi_sample_pipelines_s11n.cpp.o
[100%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/streaming/gapi_streaming_sync_tests.cpp
[100%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/streaming/gapi_streaming_tests.cpp.o
[100%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/streaming/gapi_streaming_vpl_core_test.
o
[100%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/test_main.cpp.o
[100%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/util/any_tests.cpp.o
[100%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/util/optional_tests.cpp.o
[100%] Building CXX object modules/gapi/CMakeFiles/opencv_test_gapi.dir/test/util/variant_tests.cpp.o
[100%] Linking CXX executable ../../bin/opencv_test_gapi
[100%] Built target opencv_test_gapi
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ ls
3rdparty               Makefile                    configured          modules                  test-reports
CMakeCache.txt         OpenCVConfig-version.cmake  custom_hal.hpp      opencv2                  tmp
CMakeDownloadLog.txt   OpenCVConfig.cmake          cv_cpu_config.h    opencv_data_config.hpp   unix-install
CMakeFiles             OpenCVModules.cmake         cvconfig.h         opencv_python_config.cmake version_string.tmp
CMakeVars.txt          apps                        data               opencv_python_tests.cfg
CPackConfig.cmake      bin                         doc                opencv_tests_config.hpp
CPackSourceConfig.cmake cmake_install.cmake        include            python_loader
CTestTestfile.cmake    cmake_uninstall.cmake       lib                setup_vars.sh
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$
```

```
opencv.hpp
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/include$ ls
CMakeLists.txt   opencv2
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/include$ cd ..
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ ls
3rdparty          CONTRIBUTING.md   LICENSE       SECURITY.md   build   data   include   platforms
CMakeLists.txt    COPYRIGHT         README.md     apps          cmake   doc    modules   samples
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4$ cd build
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ ls
3rdparty                  Makefile                      configured          modules                    test-reports
CMakeCache.txt            OpenCVConfig-version.cmake    custom_hal.hpp      opencv2                    tmp
CMakeDownloadLog.txt      OpenCVConfig.cmake            cv_cpu_config.h     opencv_data_config.hpp     unix-install
CMakeFiles                OpenCVModules.cmake           cvconfig.h          opencv_python_config.cmake version_string
CMakeVars.txt             apps                          data                opencv_python_tests.cfg
CPackConfig.cmake         bin                           doc                 opencv_tests_config.hpp
CPackSourceConfig.cmake   cmake_install.cmake           include             python_loader
CTestTestfile.cmake       cmake_uninstall.cmake         lib                 setup_vars.sh
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ ls include
CMakeFiles   CTestTestfile.cmake   Makefile   cmake_install.cmake
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ ls opencv2
cvconfig.h   opencv_modules.hpp
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ ls
3rdparty                  Makefile                      configured          modules                    test-reports
CMakeCache.txt            OpenCVConfig-version.cmake    custom_hal.hpp      opencv2                    tmp
CMakeDownloadLog.txt      OpenCVConfig.cmake            cv_cpu_config.h     opencv_data_config.hpp     unix-install
CMakeFiles                OpenCVModules.cmake           cvconfig.h          opencv_tests_config.hpp    version_string
CMakeVars.txt             apps                          data                opencv_tests_config.hpp
CPackConfig.cmake         bin                           doc                 opencv_tests_config.hpp
CPackSourceConfig.cmake   cmake_install.cmake           include             python_loader
CTestTestfile.cmake       cmake_uninstall.cmake         lib                 setup_vars.sh
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ sudo make install
[sudo] password for maydlee:
```

https://www.cnblogs.com/dinghongkai/p/11287688.html
OpenCV 自定义环境变量 **pkg-config /
PKG_CONFIG_PATH**

https://blog.csdn.net/teleger/article/details/105264554
CMake + OpenCV + pkg-config

也可以直接使用sudo make install安装

```
maydlee@LAPTOP-U1MO0N2F: ~

CMakeDownloadLog.txt        OpenCVConfig.cmake        cv_cpu_config.h    opencv_data_config.hpp       unix-install
CMakeFiles                  OpenCVModules.cmake       cvconfig.h         opencv_python_config.cmake   version_string.tmp
CMakeVars.txt               apps                      data               opencv_python_tests.cfg
CPackConfig.cmake           bin                       doc                opencv_tests_config.hpp
CPackSourceConfig.cmake     cmake_install.cmake       include            python_loader
CTestTestfile.cmake         cmake_uninstall.cmake     lib                setup_vars.sh
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ sudo make install
[sudo] password for maydlee:
[  0%] Built target opencv_highgui_plugins
[  1%] Built target libopenjp2
[  1%] Built target opencv_videoio_plugins
[  1%] Built target ittnotify
[  2%] Built target zlib
[  3%] Built target ippiw
[ 10%] Built target opencv_core
[ 15%] Built target opencv_imgproc
[ 19%] Built target libjpeg-turbo
[ 21%] Built target libtiff
[ 28%] Built target libwebp
[ 29%] Built target libpng
[ 35%] Built target IlmImf
[ 37%] Built target opencv_imgcodecs
[ 38%] Built target opencv_videoio
[ 38%] Built target opencv_highgui
[ 39%] Built target opencv_ts
[ 41%] Built target opencv_perf_core
[ 44%] Built target opencv_test_core
[ 44%] Built target opencv_flann
[ 44%] Built target opencv_test_flann
[ 46%] Built target opencv_perf_imgproc
[ 49%] Built target opencv_test_imgproc
[ 50%] Built target opencv_ml
```

输入密码后开始安装

```
[ 85%] Built target opencv_test_video
[ 86%] Built target ade
[ 92%] Built target opencv_gapi
[ 93%] Built target opencv_perf_gapi
[ 98%] Built target opencv_test_gapi
[ 98%] Built target opencv_annotation
[ 98%] Built target opencv_visualisation
[100%] Built target opencv_interactive-calibration
[100%] Built target opencv_version
[100%] Built target opencv_model_diagnostics
Install the project...
-- Install configuration: "Release"
-- Installing: /usr/local/share/licenses/opencv4/ippicv-readme.htm
-- Installing: /usr/local/share/licenses/opencv4/ippicv-EULA.txt
-- Installing: /usr/local/share/licenses/opencv4/ippicv-third-party-programs.txt
-- Installing: /usr/local/share/licenses/opencv4/ippiw-support.txt
-- Installing: /usr/local/share/licenses/opencv4/ippiw-third-party-programs.txt
-- Installing: /usr/local/share/licenses/opencv4/ippiw-EULA.txt
-- Installing: /usr/local/share/licenses/opencv4/opencl-headers-LICENSE.txt
-- Installing: /usr/local/share/licenses/opencv4/ade-LICENSE
-- Installing: /usr/local/include/opencv4/opencv2/cvconfig.h
-- Installing: /usr/local/include/opencv4/opencv2/opencv_modules.hpp
-- Installing: /usr/local/lib/cmake/opencv4/OpenCVModules.cmake
-- Installing: /usr/local/lib/cmake/opencv4/OpenCVModules-release.cmake
-- Installing: /usr/local/lib/cmake/opencv4/OpenCVConfig-version.cmake
-- Installing: /usr/local/lib/cmake/opencv4/OpenCVConfig.cmake
-- Installing: /usr/local/bin/setup_vars_opencv4.sh
-- Installing: /usr/local/share/opencv4/valgrind.supp
-- Installing: /usr/local/share/opencv4/valgrind_3rdparty.supp
-- Installing: /usr/local/share/licenses/opencv4/zlib-README
-- Installing: /usr/local/share/licenses/opencv4/libjpeg-turbo-README.md
-- Installing: /usr/local/share/licenses/opencv4/libjpeg-turbo-LICENSE.md
```

```
maydlee@LAPTOP-U1MO0N2F: ~

[ 85%] Built target opencv_test_video
[ 86%] Built target ade
[ 92%] Built target opencv_gapi
[ 93%] Built target opencv_perf_gapi
[ 98%] Built target opencv_test_gapi
[ 98%] Built target opencv_annotation
[ 98%] Built target opencv_visualisation
[100%] Built target opencv_interactive-calibration
[100%] Built target opencv_version
[100%] Built target opencv_model_diagnostics
Install the project...
-- Install configuration: "Release"
-- Installing: /usr/local/share/licenses/opencv4/ippicv-readme.htm
-- Installing: /usr/local/share/licenses/opencv4/ippicv-EULA.txt
-- Installing: /usr/local/share/licenses/opencv4/ippicv-third-party-programs.txt
-- Installing: /usr/local/share/licenses/opencv4/ippiw-support.txt
-- Installing: /usr/local/share/licenses/opencv4/ippiw-third-party-programs.txt
-- Installing: /usr/local/share/licenses/opencv4/ippiw-EULA.txt
-- Installing: /usr/local/share/licenses/opencv4/opencl-headers-LICENSE.txt
-- Installing: /usr/local/share/licenses/opencv4/ade-LICENSE
-- Installing: /usr/local/include/opencv4/opencv2/cvconfig.h
-- Installing: /usr/local/include/opencv4/opencv2/opencv_modules.hpp
-- Installing: /usr/local/lib/cmake/opencv4/OpenCVModules.cmake
-- Installing: /usr/local/lib/cmake/opencv4/OpenCVModules-release.cmake
-- Installing: /usr/local/lib/cmake/opencv4/OpenCVConfig-version.cmake
-- Installing: /usr/local/lib/cmake/opencv4/OpenCVConfig.cmake
-- Installing: /usr/local/bin/setup_vars_opencv4.sh
-- Installing: /usr/local/share/opencv4/valgrind.supp
-- Installing: /usr/local/share/opencv4/valgrind_3rdparty.supp
-- Installing: /usr/local/share/licenses/opencv4/zlib-README
-- Installing: /usr/local/share/licenses/opencv4/libjpeg-turbo-README.md
-- Installing: /usr/local/share/licenses/opencv4/libjpeg-turbo-LICENSE.md
```
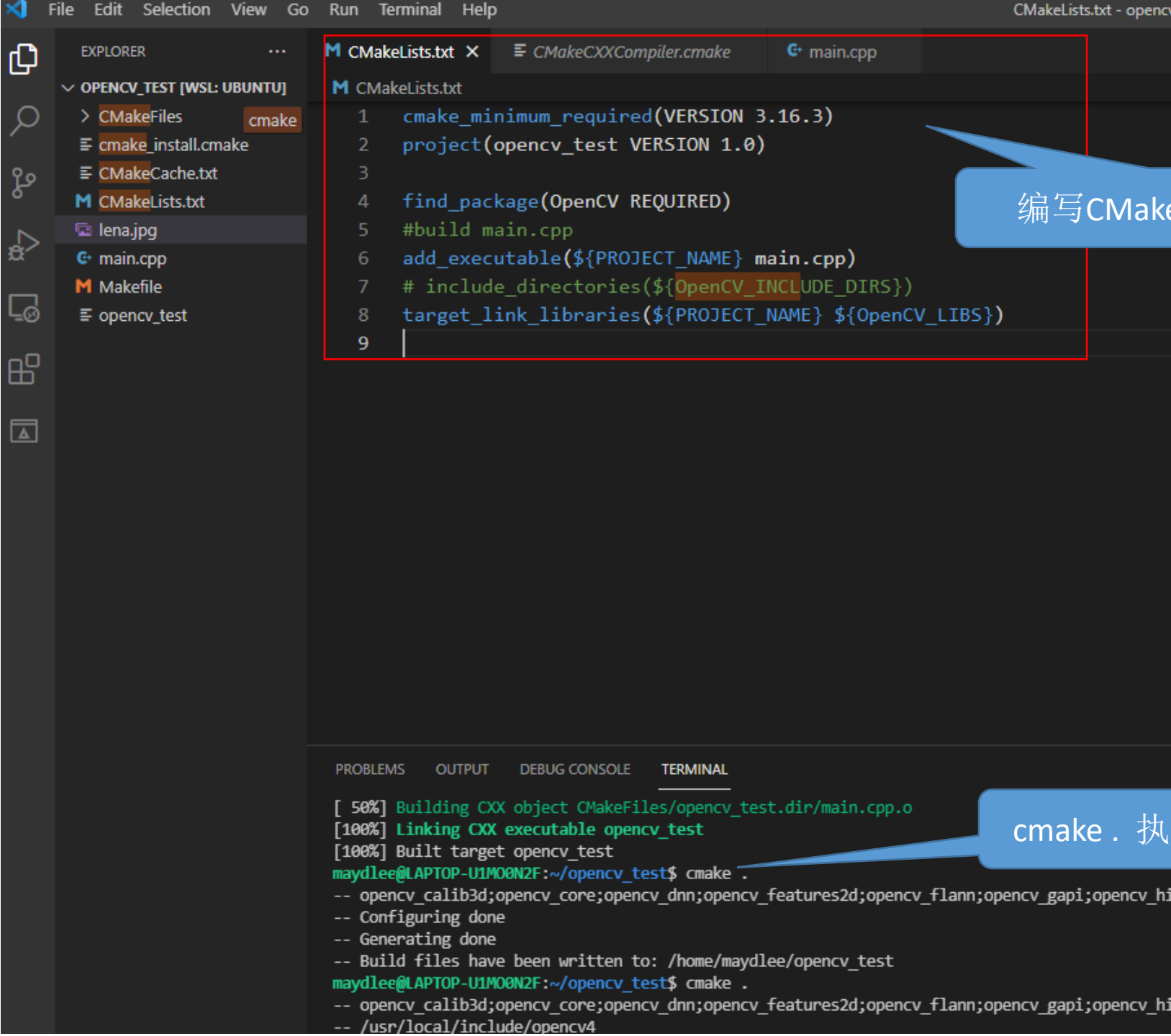
```
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_frontalface_alt2.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_frontalface_alt_tree.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_frontalface_default.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_fullbody.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_lefteye_2splits.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_licence_plate_rus_16stages.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_lowerbody.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_profileface.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_righteye_2splits.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_russian_plate_number.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_smile.xml
-- Installing: /usr/local/share/opencv4/haarcascades/haarcascade_upperbody.xml
-- Installing: /usr/local/share/opencv4/lbpcascades/lbpcascade_frontalcatface.xml
-- Installing: /usr/local/share/opencv4/lbpcascades/lbpcascade_frontalface.xml
-- Installing: /usr/local/share/opencv4/lbpcascades/lbpcascade_frontalface_improved.xml
-- Installing: /usr/local/share/opencv4/lbpcascades/lbpcascade_profileface.xml
-- Installing: /usr/local/share/opencv4/lbpcascades/lbpcascade_silverware.xml
-- Installing: /usr/local/bin/opencv_annotation
-- Set runtime path of "/usr/local/bin/opencv_annotation" to "/usr/local/lib"
-- Installing: /usr/local/bin/opencv_visualisation
-- Set runtime path of "/usr/local/bin/opencv_visualisation" to "/usr/local/lib"
-- Installing: /usr/local/bin/opencv_interactive-calibration
-- Set runtime path of "/usr/local/bin/opencv_interactive-calibration" to "/usr/local/lib"
-- Installing: /usr/local/bin/opencv_version
-- Set runtime path of "/usr/local/bin/opencv_version" to "/usr/local/lib"
-- Installing: /usr/local/bin/opencv_model_diagnostics
-- Set runtime path of "/usr/local/bin/opencv_model_diagnostics" to "/usr/local/lib"
maydlee@LAPTOP-U1MO0N2F:~/opencv-4.5.4/build$ cd ~
maydlee@LAPTOP-U1MO0N2F:~$ ls
4.5.4.tar.gz  hello.cpp  opencv-4.5.4
maydlee@LAPTOP-U1MO0N2F:~$ ^C
maydlee@LAPTOP-U1MO0N2F:~$
```

编写CMakeLists.txt文件

cmake . 执行CMakeLists.txt

```
1  cmake_minimum_required(VERSION 3.16.3)
2  project(opencv_test VERSION 1.0)
3
4  find_package(OpenCV REQUIRED)
5  #build main.cpp
6  add_executable(${PROJECT_NAME} main.cpp)
7  # include_directories(${OpenCV_INCLUDE_DIRS})
8  target_link_libraries(${PROJECT_NAME} ${OpenCV_LIBS})
9
```

```
[ 50%] Building CXX object CMakeFiles/opencv_test.dir/main.cpp.o
[100%] Linking CXX executable opencv_test
[100%] Built target opencv_test
maydlee@LAPTOP-U1MO0N2F:~/opencv_test$ cmake .
-- opencv_calib3d;opencv_core;opencv_dnn;opencv_features2d;opencv_flann;opencv_gapi;opencv_hi
-- Configuring done
-- Generating done
-- Build files have been written to: /home/maydlee/opencv_test
maydlee@LAPTOP-U1MO0N2F:~/opencv_test$ cmake .
-- opencv_calib3d;opencv_core;opencv_dnn;opencv_features2d;opencv_flann;opencv_gapi;opencv_hi
-- /usr/local/include/opencv4
```

```cpp
main.cpp > ...
1    #include <iostream>
2    #include <opencv2/opencv.hpp>
3    using namespace std;
4    int main()
5    {
6        float a[6]={1.0f, 1.0f, 1.0f, 2.0f, 2.0f, 2.0f};
7        float b[6]={1.0f, 2.0f, 3.0f, 4.0f, 5.0f, 6.0f};
8        cv::Mat A(2, 3, CV_32FC1, a);
9        cv::Mat B(3, 2, CV_32FC1, b);
10       cv::Mat C = A * B;
11       cout << "Matrix C = " << endl << C << endl;
12     return 0;
13   }
```

编写测试程序

```
maydlee@LAPTOP-U1MO0N2F:~/opencv_test$ ./
CMakeFiles/  lena.jpg    main.cpp     opencv_test
maydlee@LAPTOP-U1MO0N2F:~/opencv_test$ ./opencv_test
Matrix C =
[9, 12;
 18, 24]
```

运行结果