

OpenCV installation in Windows 10

The following procedure is extracted from the website :

<https://cv-tricks.com/how-to/installation-of-opencv-4-1-0-in-windows-10-from-source/> .

The main steps are:

1. Installing VisualStudio and CMake
2. Downloading OpenCV
3. Installing OpenCV
4. Setting the environment variables

BE CAREFUL!

For a complete installation you also need the extra_modules. They contain SIFT features extractors and other methods important for some Laboratories. Moreover, you need to set the OPENCV_ENABLE_NONFREE flag to ON.

If you decide to follow other guides make sure to install the extra modules.

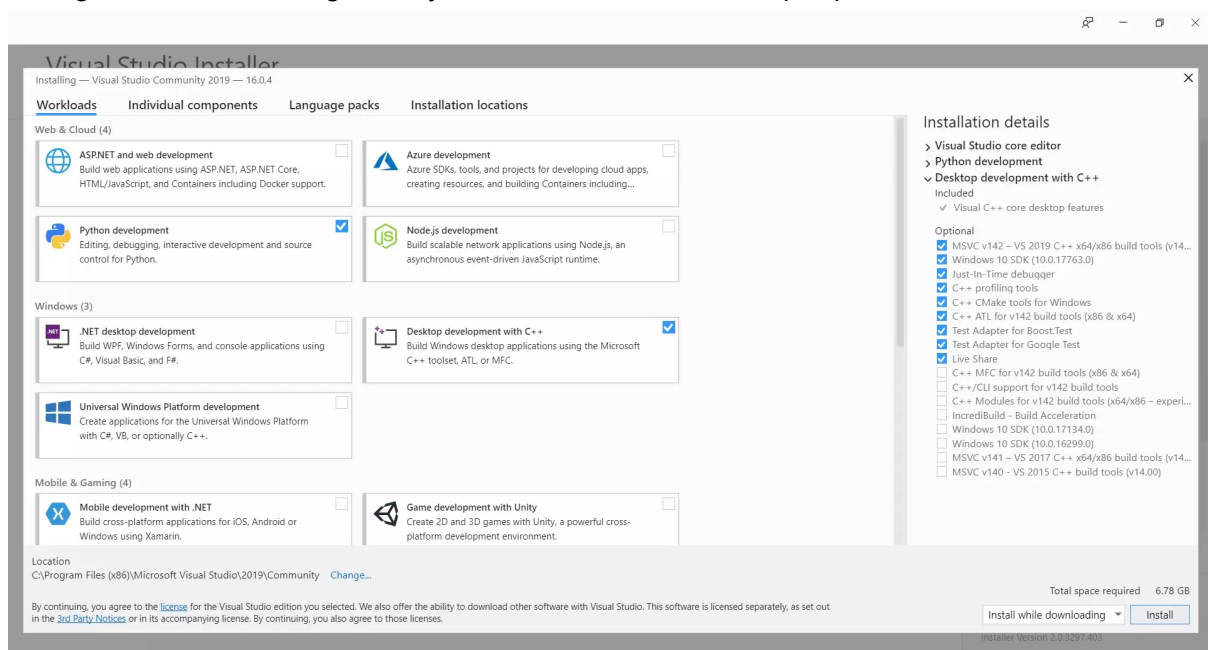
1 Installing the required software

Install VisualStudio (2019 or newer)

From the following link you can download the most recent version of visual studio.

<https://visualstudio.microsoft.com/it/downloads/>

During the installation flag the “Python” and the “C++ desktop” options



Then click to install.

Restart the computer after the installation.

Install CMake

From the following link you can install CMake for windows.

<https://cmake.org/download/>

(You may also choose the portable version)

2 Downloading the code

Create a workspace directory (e.g. D:\workspace) and create a directory “opencv” (D:\workspace\opencv)

Create two directories named “source” and “build” inside it.

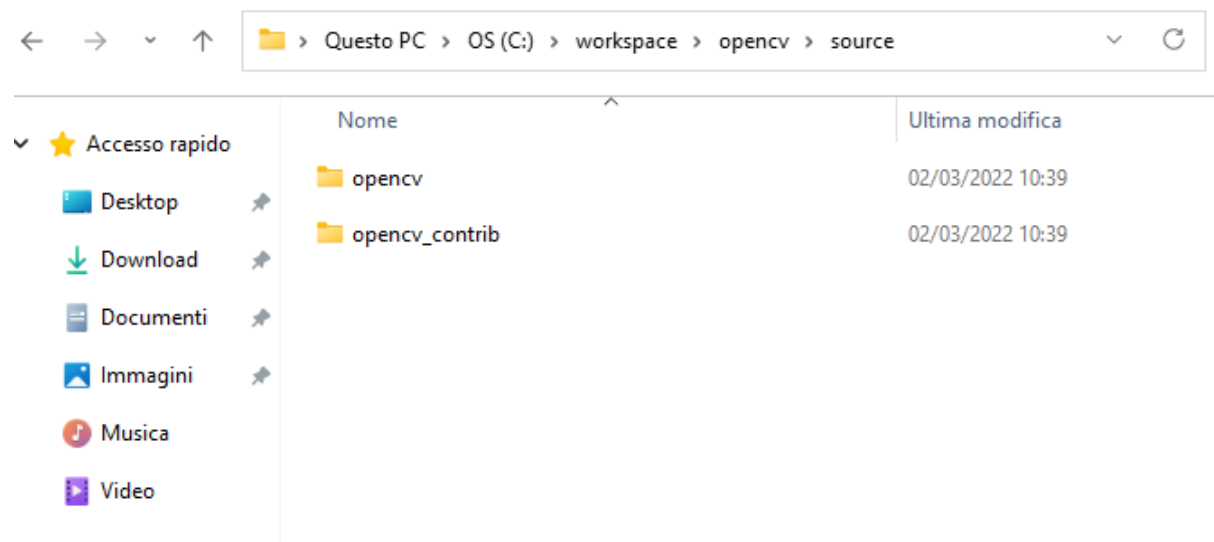
Download the code from:

<https://github.com/opencv/opencv/archive/4.5.2.zip>

https://github.com/opencv/opencv_contrib/archive/refs/heads/4.x.zip

Unzip the two folders inside the “source”

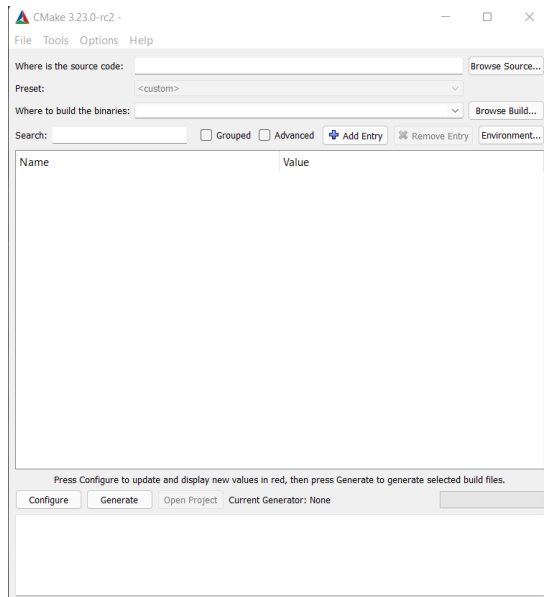
Now you should have the following directories



3 Compile and Install OpenCV

Open CMake with right click and run as administrator (If you installed it, search between your programs. If downloaded the portable version open gui inside the bin directory).

CMake-gui look like this:

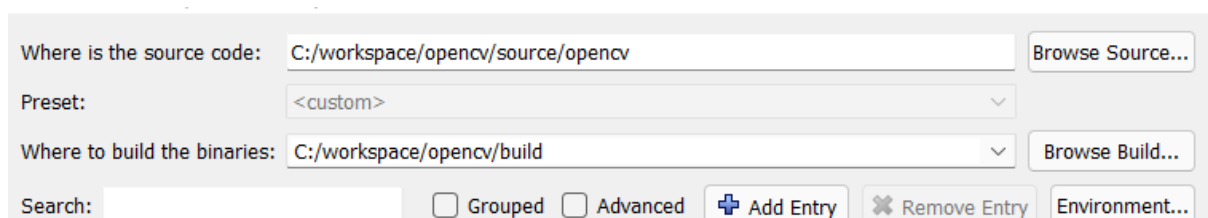


Set the two top white boxes.

In the "source code" box set the path to the source directory of opencv (e.g. D:\workspace\opencv\source\opencv)

In the "build binary" box the build (empty) directory that was created earlier (e.g. C:\workspace\opencv\build)

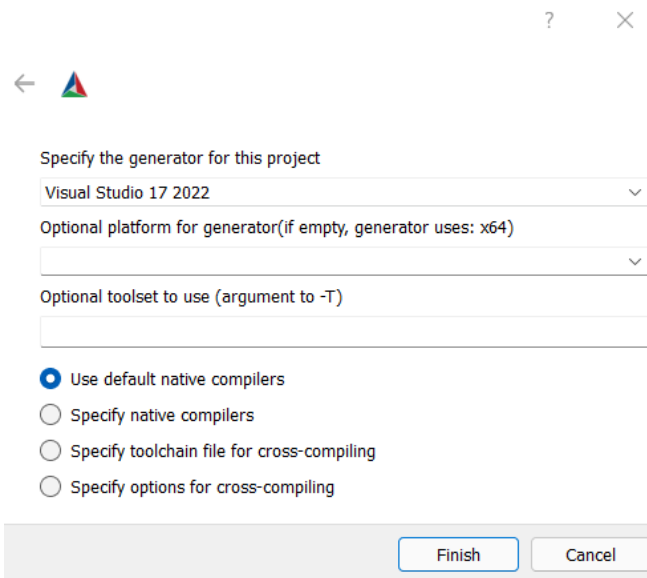
It should look like this (with your path):



Now click Configure.

It will ask the compiler. You should see the version of Visual Studio that you installed. If not, try to change it by clicking the first box.

It should look like this:



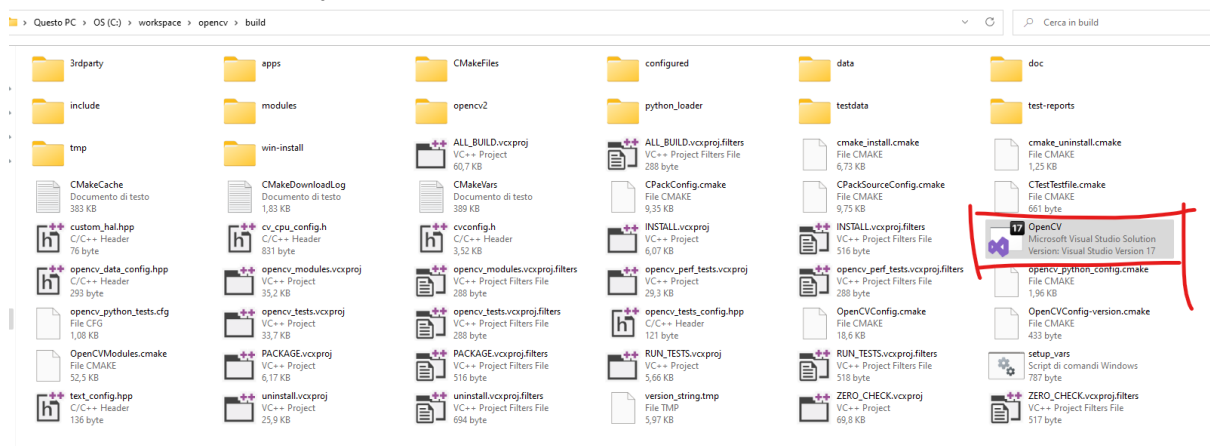
Click the Finish button.

When CMake finishes to configure, in the window with the flags in red look for "OPENCV_EXTRA_MODULES_PATH" and set it to your contrib modules path (e.g. D:/workspace/opencv/source/opencv_contrib/modules) as depicted in the figure:

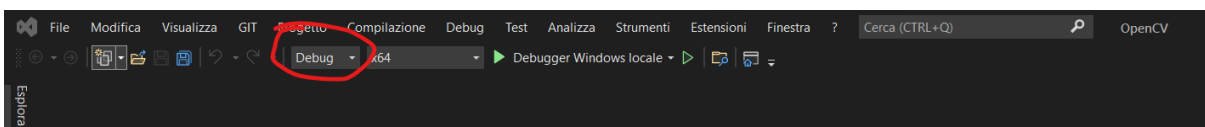
Moreover, to use patent algorithms (e.g. SIFT features) you need to set OPENCV_ENABLE_NONFREE to True

Now click Configure again.
When it finishes, click generate.

Now in the build directory open the file OpenCV.sln with VisualStudio

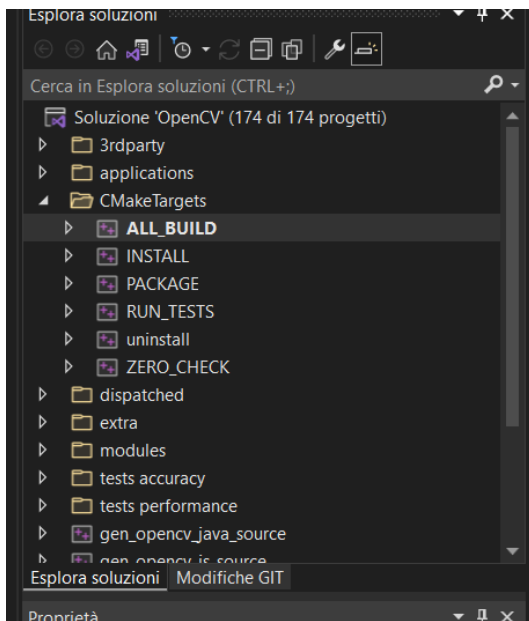


Change the upper box from DEBUG to RELEASE.



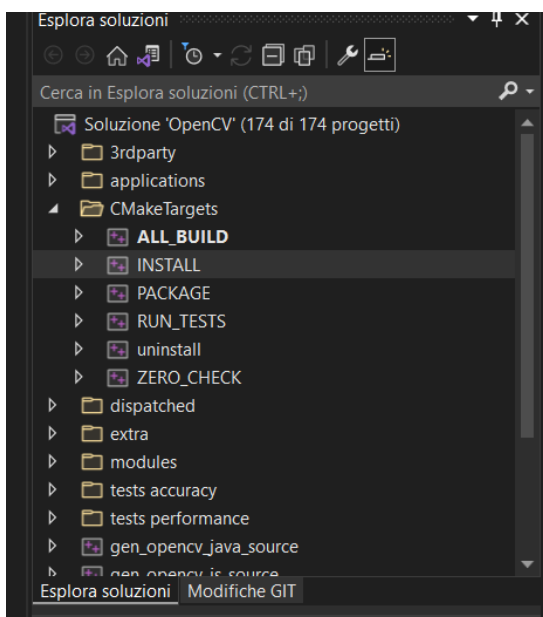
Scroll down the Solution Explorer Dialog Window to find the **ALL_BUILD**.
Right click -> Build (Compila)

(It will take a while depending on the computer)



After the build we have to install selecting **INSTALL** below **ALL_BUILD** and again right click and build.

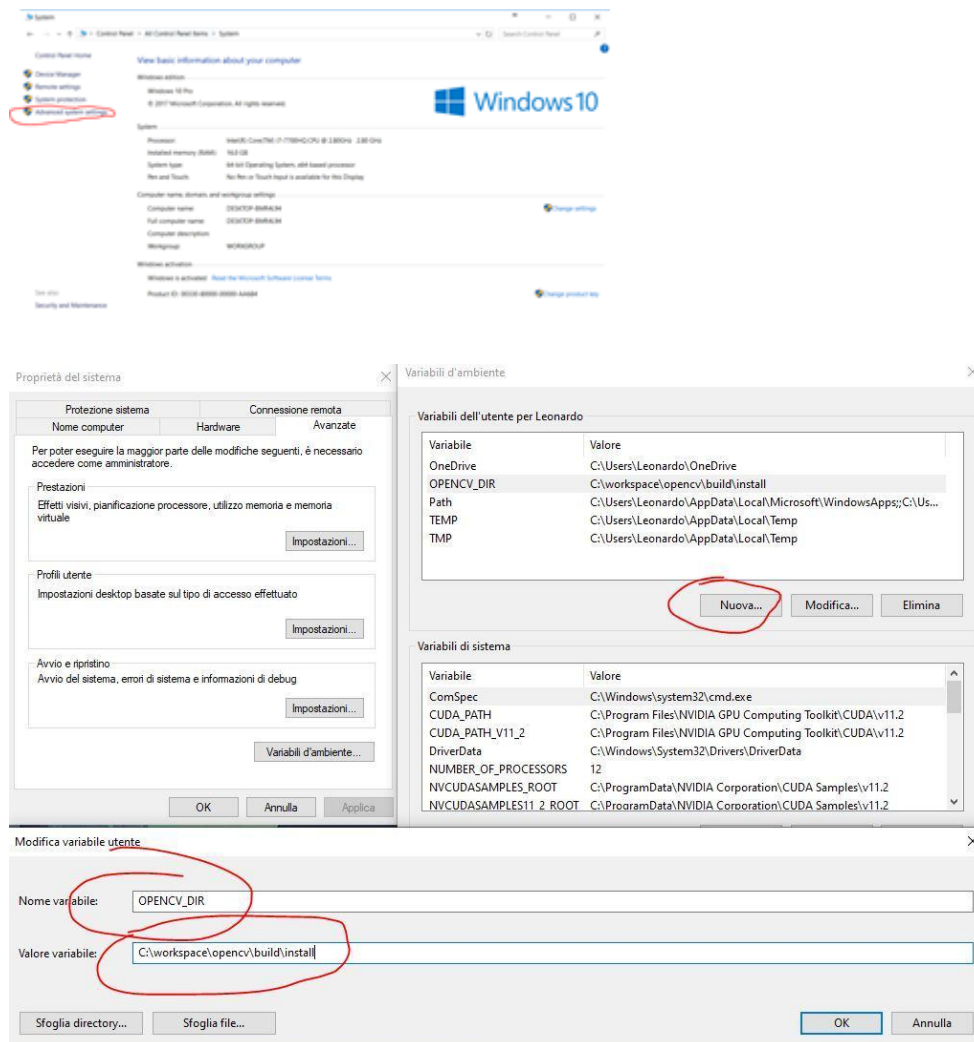
(It will take a while depending on the computer)



4 Set environment variable

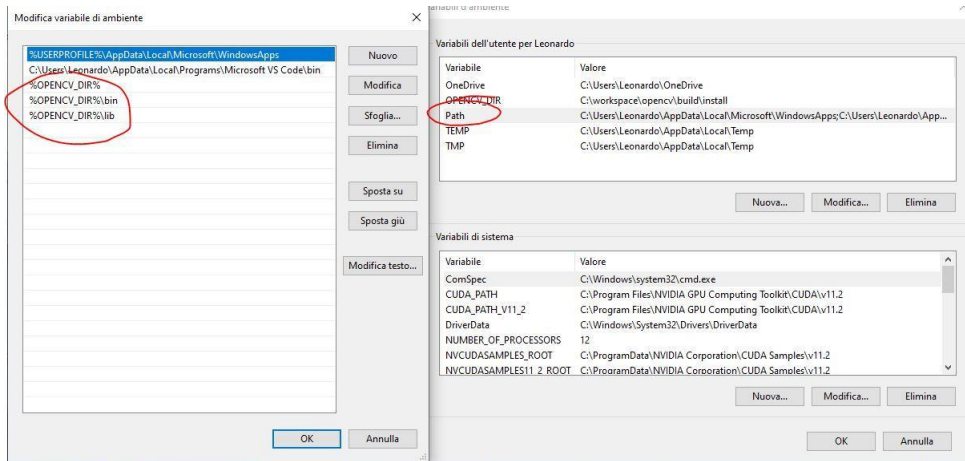
Now we have completed the installation of OpenCV but you need to set the path to the library in order to use it on our project.

Control Panel -> system -> advanced system settings -> environment variables -> new



As shown in the Figure before, create a new environment variable called OPENCV_DIR and with the right value to your OpenCV installation

Access the content of the Path variable (double click on it) and the path as shown in the figure



Confirm everything