



Universidade Estadual de Feira de Santana

TEC434 – COMPUTAÇÃO VISUAL

INSTALAÇÃO DO OPENCV NO WINDOWS

PROF. DR. CLAUDIO EDUARDO GOES



Roteiro (Windows)

Instalação para o Windows

- Código Fonte do OpenCV
- Instalação do Cmake
- Instalação do Rapid Environment Editor
- Instalação do Qt
- Configuração dos diretórios do Qt no Path do Windows
- Configuração do Cmake
- Compilação do OpenCV
- Adicionando os diretórios do OpenCV no Path do Windows
- Erros e soluções para Windows



Código Fonte do OpenCV

www.opencv.org

The screenshot shows the OpenCV website homepage. The OpenCV logo is in the top left. A navigation menu in the top center includes links for ABOUT, DOWNLOADS, DOCUMENTATION, PLATFORMS, SUPPORT, and CONTRIBUTE. In the top right, there are social media icons and a search bar. A red arrow points to the 'DONATE' button, which features a GitHub Octocat icon. A green banner in the top right corner says 'Fork me on GitHub'. The main content area has a section titled 'OPENCV (OPEN SOURCE COMPUTER VISION)' with a paragraph describing the project. To the right of this is a 'QUICK LINKS' section with links to documentation, forums, bug reports, build farm, store, and books. Further right is a 'LATEST DOWNLOADS' section, which is highlighted with a red box and a large red arrow. This section lists 'VERSION 3.0' dated '2015-06-04' and provides links for Windows, Linux/Mac, Android, and iOS. At the bottom, a 'WHAT'S NEW' section lists recent updates, including GSOC 2015 video, OpenCV 2.4+3.0 Manager for Android beta testing, OpenCV 3.0 gold release, and Intel's launch of OpenCV 3.0 beta support.

OpenCV
(OPEN SOURCE
COMPUTER VISION)

OpenCV is released under a BSD license and hence it's free for both academic and commercial use. It has C++, C, Python and Java interfaces and supports Windows, Linux, Mac OS, iOS and Android. OpenCV was designed for computational efficiency and with a strong focus on real-time applications. Written in optimized C/C++, the library can take advantage of multi-core processing. Enabled with OpenCL, it can take advantage of the hardware acceleration of the underlying heterogeneous compute platform. Adopted all around the world, OpenCV has more than 47 thousand people of user community and estimated number of downloads exceeding 9 million. Usage ranges from interactive art, to mines inspection, stitching maps on the web or through advanced robotics.

QUICK LINKS:

- [Online documentation](#)
- [User Q&A forum](#)
- [Report a bug](#)
- [Build farm](#)
- [Store](#)
- [Books](#)

LATEST DOWNLOADS

2015-06-04
VERSION 3.0

- [OpenCV for Windows](#)
- [OpenCV for Linux/Mac](#)
- [OpenCV for Android](#)
- [OpenCV for iOS](#)

WHAT'S NEW

Date	Event
2015-11-06	GSOC 2015 video New video demonstrating GSOC 2015 contributions
2015-07-20	OpenCV 2.4+3.0 Manager for Android beta testing starts
2015-06-04	OpenCV 3.0 OpenCV 3.0 gold has been just released, with
2015-05-01	Intel launched OpenCV 3.0 beta support OpenCV 3.0 beta is now a



OpenCV - Download

Clique no link “**here**”.

The screenshot shows the OpenCV Downloads page in a web browser. The browser's address bar displays 'opencv.org/downloads.html'. The page features the OpenCV logo on the left and a navigation menu with links to 'ABOUT', 'DOWNLOADS', 'DOCUMENTATION', 'PLATFORMS', 'SUPPORT', and 'CONTRIBUTE'. A 'DONATE' button with a GitHub logo is visible on the right. A green banner in the top right corner says 'Fork me on GitHub'. The main content area lists two versions: 'VERSION 3.0' (dated 2015-06-04) and 'VERSION 3.0 RC1' (dated 2015-04-24). Each version has links for 'OpenCV for Windows', 'OpenCV for Linux/Mac', and 'OpenCV for Android'. A large red arrow points to the word 'here' in the text 'The Git repository is here', which is enclosed in a red box. Another red arrow points to the 'DONATE' button. A text box on the right side of the page contains the following text: 'PLEASE REFER TO THE INSTALLATION DOCUMENTATION', 'OPENCV CHANGE LOGS', and 'The Git repository is here'.



OpenCV - Download

Clique em “releases”.

The screenshot shows the GitHub repository page for **Itseez / opencv**. The repository has 17,216 commits, 3 branches, 47 releases (highlighted with a red box and a red arrow), and 484 contributors. The main content area shows a list of recent commits, including a merge pull request #4110 and several updates to the 3rdparty, apps, cmake, data, doc, include, modules, and platforms folders. The right sidebar contains links to Code, Issues (933), Pull requests (38), Wiki, Pulse, and Graphs. At the bottom, there are options to clone the repository via HTTPS or Subversion, and a button to clone it to the desktop.

GitHub

This repository Search

Explore Features Enterprise Pricing

Sign up Sign in

Itseez / opencv

953 7,371 6,463

Open Source Computer Vision Library <http://opencv.org>

17,216 commits 3 branches 47 releases 484 contributors

Branch: master opencv / +

alalek Merge pull request #4110 from LaurentBerger:Bug4370 Latest commit 7ddc2cc 2 days ago

File	Commit Message	Time
3rdparty	New variant of iOS framework building, fixed some warnings for XCode ...	9 days ago
apps	add checks for valid input data given to parameters	4 months ago
cmake	New variant of iOS framework building, fixed some warnings for XCode ...	9 days ago
data	replacement for #4160	5 months ago
doc	Merge pull request #5400 from dtmoodie:thrust_tutorial	3 days ago
include	Added cmake option for abi descriptor generating (GENERATE_ABI_DESCRIP...	8 months ago
modules	Merge pull request #5620 from paroj:calibratecpp	3 days ago
platforms	New variant of iOS framework building, fixed some warnings for XCode ...	9 days ago

Aguardando camo.githubusercontent.com...atching_detailed.cpp 3 days ago

Code

Issues 933

Pull requests 38

Wiki

Pulse

Graphs

HTTPS clone URL

<https://github.com>

You can clone with [HTTPS](#) or [Subversion](#).

Clone in Desktop

Download ZIP



OpenCV - Download

Faça o download do arquivo compactado do código fonte do OpenCV versão 2.4.11.

The screenshot shows the GitHub release page for OpenCV 2.4.11. The page lists previous releases (2.4.10.4 and 2.4.10.2) and the current release (2.4.11) by user apavlenko. The 'Downloads' section for the current release is visible, with the 'Source code (zip)' link highlighted by a red box and a red arrow pointing to it. The 'Source code (tar.gz)' link is also visible below it.

on 20 May **2.4.10.4** [00d9f69](#) [zip](#) [tar.gz](#)

Since on 6 May **Show 2 other tags**

on 22 Apr **2.4.10.2** [a984da9](#) [zip](#) [tar.gz](#)

OpenCV 2.4.11

[apavlenko](#) released this on 25 Feb · 7 commits to master since this release

Release OpenCV 2.4.11.

Downloads

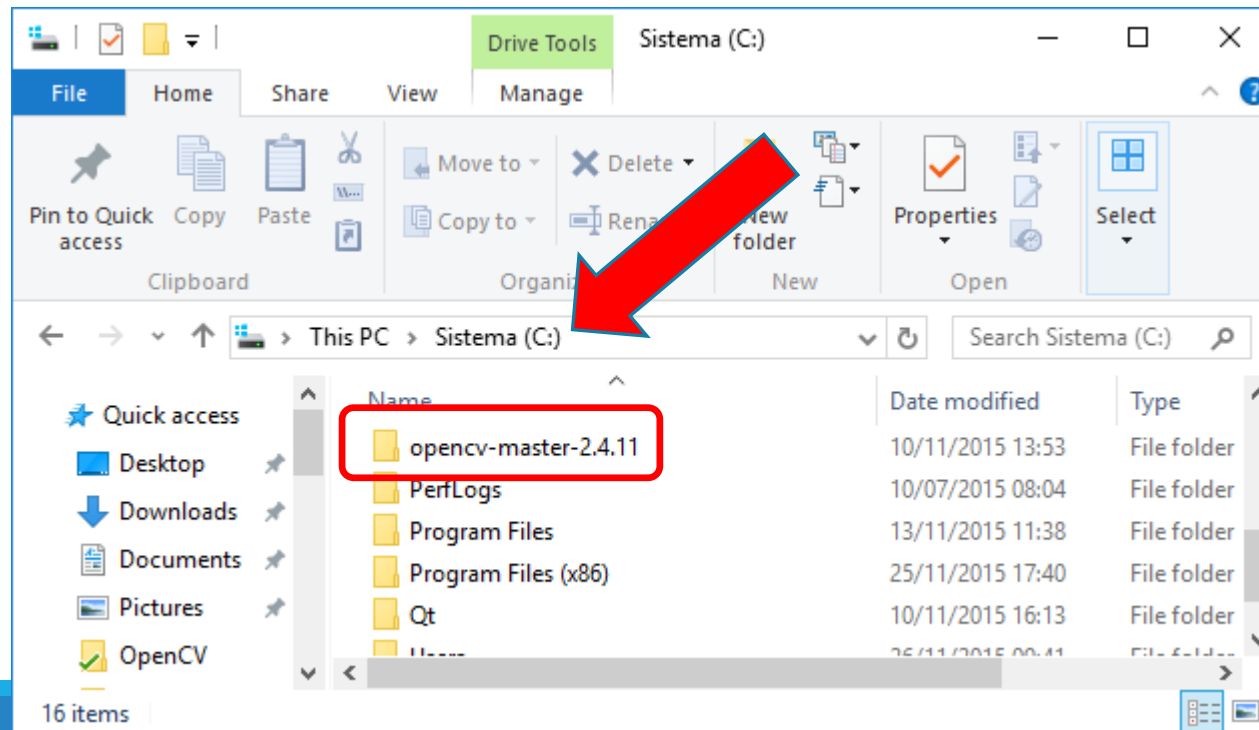
[Source code \(zip\)](#)

[Source code \(tar.gz\)](#)



OpenCV – Extração do Código Fonte

Extraia o conteúdo do diretório do arquivo compactado do OpenCV para o diretório **RAÍZ** <C:\> do Windows.





Instalação do CMake

Na página do cmake.org Faça o download e instale o seguinte arquivo.

The screenshot shows the CMake website's download page. The browser address bar displays <https://cmake.org/download/>. The page title is "Download | CMake". The navigation menu includes "About", "Resources", "Development", "Sources", and "Download". The main content area is titled "Binary distributions:" and contains a table of available binaries.

Platform	Files
Windows (Win32 Installer)	cmake-3.4.0-win32-x86.exe
Windows ZIP	cmake-3.4.0-win32-x86.zip
Mac OSX 10.6 or later	cmake-3.4.0-Darwin-x86_64.dmg cmake-3.4.0-Darwin-x86_64.tar.gz cmake-3.4.0-Darwin-x86_64.tar.Z
Linux x86_64	cmake-3.4.0-Linux-x86_64.sh cmake-3.4.0-Linux-x86_64.tar.gz cmake-3.4.0-Linux-x86_64.tar.Z
Linux i386	cmake-3.4.0-Linux-i386.sh cmake-3.4.0-Linux-i386.tar.gz cmake-3.4.0-Linux-i386.tar.Z

Below the table, there is a section for "Download verification:" with a table that has columns for "Role" and "Files".



Instalação da IDE QT

Na página do qt.io Faça o download e instale o seguinte que contém o compilador MinGW.

The screenshot shows the Qt website's download page. The browser's address bar displays www.qt.io/download-open-source/#section-2. The page has a navigation bar with links: Download, Device Creation, Application Development, Services, and Developers. Below the navigation bar, there are several download options for Qt 5.5.1. The options are categorized into 'Windows Host' and 'Source packages & Other releases'. The 'Windows Host' section lists several options, including 'Qt 5.5.1 for Windows 32-bit (MinGW 4.9.2, 1.0 GB)', which is highlighted with a red box and a red arrow pointing to it. The 'Source packages & Other releases' section lists 'For Windows users as a single zip file (542 MB)'. The browser's user interface shows the name 'Claudio Eduardo' in the top right corner.

Qt - Download Open Source

www.qt.io/download-open-source/#section-2

Qt Download Device Creation Application Development Services Developers

Qt 5.5.1 for Android (OS X, 747 MB) (info)

Qt 5.5.1 for Android and iOS (OS X, 2.0 GB) (info)

Windows Host

Qt 5.5.1 for Windows 64-bit (VS 2013, 823 MB) (info)

Qt 5.5.1 for Windows 32-bit (VS 2013, 804 MB) (info)

Qt 5.5.1 for Windows 32-bit (VS 2012, 747 MB) (info)

Qt 5.5.1 for Windows 32-bit (VS 2010, 725 MB) (info)

Qt 5.5.1 for Windows 32-bit (MinGW 4.9.2, 1.0 GB) (info)

Qt 5.5.1 for Android (Windows 32-bit, 1.1 GB) (info)

Qt 5.5.1 for Windows RT 32-bit (914 MB) (info)

Source packages & Other releases

The source code is available:

For Windows users as a single zip file (542 MB) (info)



Instalação do Rapid Environment Editor

Faça o Download e instale a ferramenta “**Rapid Environment Editor**”.

The screenshot shows the website www.rapidee.com/en/download. The page has a green header with the Rapid Environment Editor logo and the text "Windows environment variables management". The header also displays the "Latest version" as "May 11, 2015 8.0 build 929" with a "download" link, and a "Make a donation!" section.

On the left, there is a sidebar menu with the following items: Home, Environment variables, PATH variable, Portable mode, Command line, Silent installation mode, Screenshots, History, ToDo, Localization, **Download** (highlighted), Donation, Support, and License.

The main content area is titled "8.0 build 929 (Windows XP, Vista, Windows 7, Windows 8)". It explains that the software can be downloaded as two variations: a Windows installer (easier) or a ZIP archive (for portability). Below this, there are three download links:

- [Download RapidEE_setup.exe \(2,895 Kb\) - 32-bit & 64-bit in one package](#)
- [Download RapidEE.zip \(1,662 Kb\) - 32-bit](#)
- [Download RapidEE64.zip \(2,084 Kb\) - 64-bit](#)

A red arrow points to the first link, "Download RapidEE_setup.exe (2,895 Kb) - 32-bit & 64-bit in one package".

At the bottom, it states: "Previous builds are available for downloading on the [history](#) page".



Configuração dos diretórios do Qt no Path do Windows

Adicione os seguintes diretórios no Path do Windows usando o “**Rapid Environment Editor**” e Salve.

Rapid Environment Editor 8.0 build 929 x64

File Edit View Help

Language: English Skin: Default User: DESKTOP-D7RUSNQ\cegoes [log]

System variables (read-only) Restart as administrator

- OS=Windows_NT
- Path=C:\Program Files (x86)\K-Lite Codec Pack\Filters\ffdshow64;C:\glext\lib;C:\glfw-3.0.4\bin.WIN32\lib-mingw;C:\Program Files (x86)\K-Lite Codec Pack\Filters\ffdshow64
- C:\glext\lib
- C:\glfw-3.0.4\bin.WIN32\lib-mingw
- C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common
- C:\Program Files (x86)\freeglut\include
- C:\Program Files (x86)\freeglut\lib
- C:\Program Files (x86)\freeglut\bin
- C:\ProgramData\Oracle\Java\javapath
- C:\Qt\Qt5.5.1\Tools\mingw492_32\lib
- C:\Qt\Qt5.5.1\Tools\mingw492_32\bin
- C:\Qt\Qt5.5.1\5.5\mingw492_32\bin
- C:\opencv-build-2.4.11\install\x64\mingw\bin
- C:\opencv-build-2.4.11\install\x64\mingw\lib
- %SystemRoot%\system32
- %SystemRoot%
- %SystemRoot%\System32\Wbem

User Variables

- APPDATA=C:\Users\cegoes\AppData\Roaming
- HOMEDRIVE=C:
- HOMEPath=\Users\cegoes
- LOCALAPPDATA=C:\Users\cegoes\AppData\Local
- LOGONSERVER=\\DESKTOP-D7RUSNQ\c
- SESSIONNAME=Console
- TEMP=C:\Users\cegoes\AppData\Local\Temp
- USERPROFILE=C:\Users\cegoes

Information

Variable name	ProgramData
Type	Read-only string
Value	C:\ProgramData

You have no write access to the system variables You have the latest version of Rapid Environment Editor!



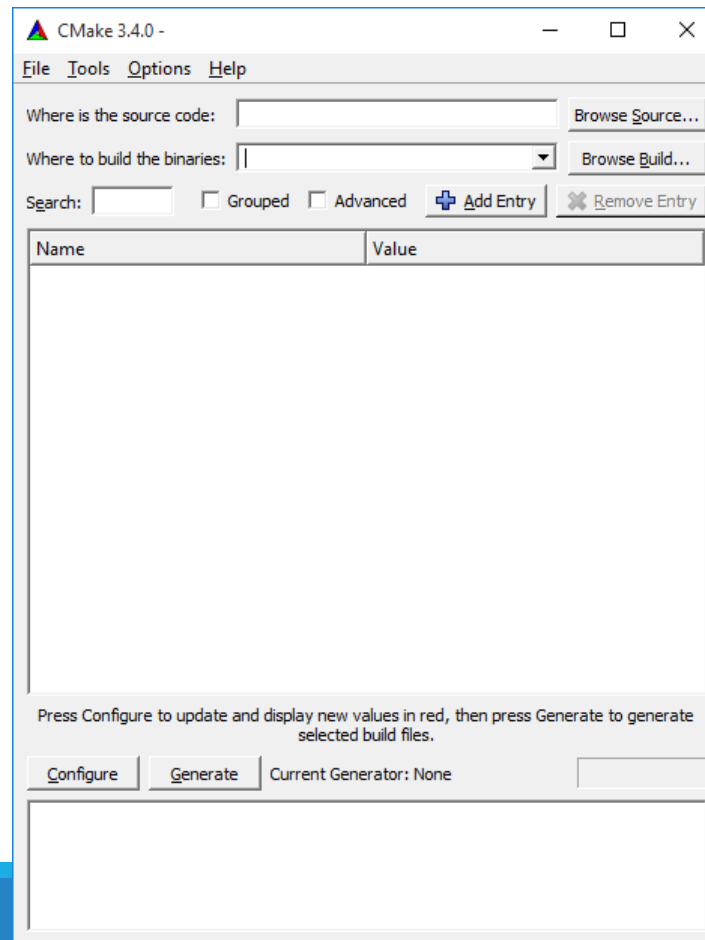
Aviso

A adição desses **diretórios** do Qt no **Path** do Windows permitirá que o sistema reconheça os **comandos necessários** para compilar as bibliotecas do OpenCV utilizando o CMake.



Configuração do diretório do OpenCV com o CMake

Execute o CMake.





Configuração do diretório do OpenCV com o CMake

CMake 3.4.0 - C:/opencv-build-2.4.11

File Tools Options Help

Where is the source code: C:/opencv-master-2.4.11 Browse Source...

Where to build the binaries: C:/opencv-build-2.4.11 Browse Build...

Search: ☐ Grouped ☐ Advanced

Name	Value
WITH_GSTREAMER_0_10	<input type="checkbox"/>
WITH_INTELPERC	<input type="checkbox"/>
WITH_IPP	<input type="checkbox"/>
WITH_JASPER	<input checked="" type="checkbox"/>
WITH_JPEG	<input checked="" type="checkbox"/>
WITH_MSMF	<input type="checkbox"/>
WITH_NVCUVID	<input type="checkbox"/>
WITH_OPENCL	<input checked="" type="checkbox"/>
WITH_OPENCLAMDBLAS	<input checked="" type="checkbox"/>
WITH_OPENCLAMDFFT	<input checked="" type="checkbox"/>
WITH_OPENEXR	<input checked="" type="checkbox"/>
WITH_OPENGL	<input checked="" type="checkbox"/>
WITH_OPENMP	<input type="checkbox"/>
WITH_OPENNI	<input type="checkbox"/>
WITH_PNG	<input checked="" type="checkbox"/>
WITH_PVAPI	<input checked="" type="checkbox"/>
WITH_QT	<input checked="" type="checkbox"/>
WITH_TBB	<input type="checkbox"/>
WITH_TIFF	<input checked="" type="checkbox"/>

Press Configure to update and display new values in red, then press Generate to generate selected build files.

Current Generator: MinGW Makefiles

cmake-gui

Specify the generator for this project

MinGW Makefiles

☒ Use default native compilers

☐ Specify native compilers

☐ Specify toolchain file for cross-compiling

☐ Specify options for cross-compiling

< Back Finish Cancel



Seleção das opções para Compilação do OpenCV

Utilizando o programa CMake do slide anterior faça:

- 1 – Selecione o diretório onde extraiu o código fonte do OpenCV (Ex: [opencv-source-2.4.11](#));
- 2 – Digite um diretório onde serão criados os arquivos binários do OpenCV (Ex: [opencv-build-2.4.11](#));
- 3 – Certifique que a opção [WITH_OPENGL](#) está **ativada**;
- 4 – Certifique que a opção [WITH_QT](#) está **ativada**;
- 5 – Pressione o botão **“Configure”**;
 - 5.1 – Caso abra uma nova janela escolha a opção **“MinGW Makefiles”**;
 - 5.2 – Pressione **Finish**;
- 6 – Pressione o botão **“Generate”**.



Compilando as Bibliotecas do OpenCV

Abra um “prompt” de comando

Digite: `cd \opencv-build-2.4.11`

Digite: `mingw32-make`

(Irá demorar um pouco para compilar tudo)

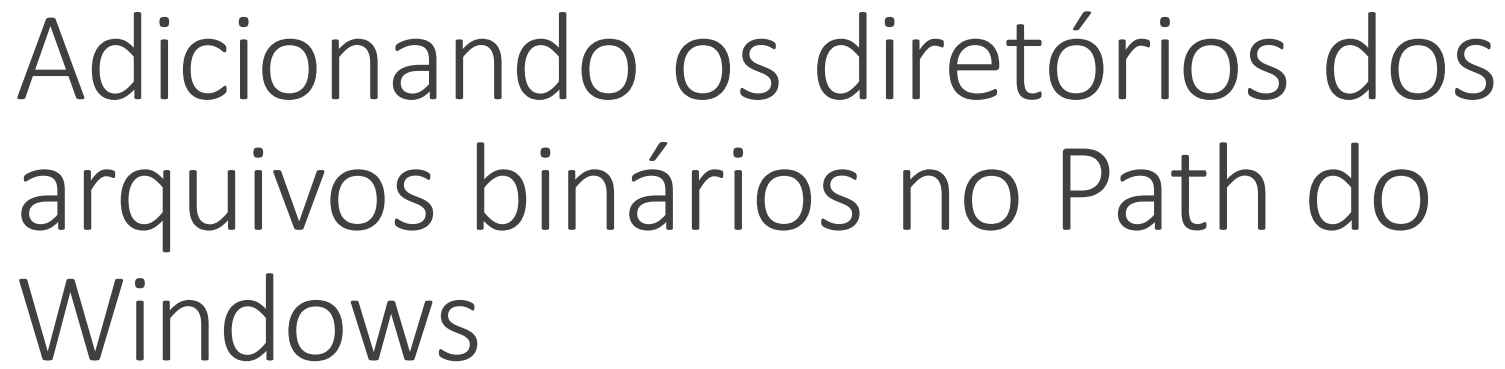
Digite: `mingw32-make install`

Não se esqueça de executar este comando!!!

```
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

C:\Users\cegoes>cd \opencv-build-2.4.11

C:\opencv-build-2.4.11>mingw32-make
```



The screenshot shows the Rapid Environment Editor window. The top menu bar includes File, Edit, View, and Help. Below the menu bar is a toolbar with various icons and a 'Donate' button. The main area is divided into two panes: 'System variables (read-only)' on the left and 'User Variables' on the right. The 'System variables' pane lists several variables, with the 'Path' variable selected and its value expanded. A red box highlights the path entries for 'opencv-build-2.4.11'. A red arrow points from a text box to the 'Restart as administrator' button. The 'User Variables' pane shows variables like APPDATA, HOMEDRIVE, and HOMEPATH. At the bottom, there is an 'Information' pane with tabs for 'Inspector' and 'Legend'. The 'Inspector' tab is active, showing details for a variable named 'ProgramData'.

Pressione primeiro esse botão para permitir a edição das variáveis



Configuração do OpenCV no QT para o Windows

Os arquivos .pro do Qt devem conter as seguintes chamadas para as bibliotecas para funcionarem no Windows.

Preste atenção, se for utilizar em outro computador ou outra versão do OpenCV, terá que ajustar os nomes das bibliotecas e também os caminhos dos diretórios.

```
AbirImagem.pro - AbirImagem - Qt Creator
File Edit Build Debug Analyze Tools Window Help
Projects
AbirImagem
AbirImagem.pro
C++ Sources
1 QT += core
2 QT -= gui
3
4 TARGET = OpenCV-Ex1
5 CONFIG += console
6 CONFIG -= app_bundle
7
8 TEMPLATE = app
9
10 SOURCES += main.cpp
11
12 win32 {
13     INCLUDEPATH += C:/opencv-build-2.4.11/install/include
14
15     LIBS += -LC:/opencv-build-2.4.11/install/x64/mingw/lib \
16         -llibopencv_core2411 \
17         -llibopencv_highgui2411 \
18         -llibopencv_imgproc2411 \
19         -llibopencv_features2d2411 \
20         -llibopencv_calib3d2411 \
21         -llibopencv_ml2411 \
22         -llibopencv_features2d2411
23 }
24
25 unix {
26     CONFIG += link_pkgconfig
27     PKGCONFIG += opencv
28 }
29 }
30
Open Documents
AbirImagem
AbirImagem.pro
Debug
Type to locate (Ctrl+K)
1 Issues 2 Search Results 3 Application Output 4 Compile Output 5 QML/JS Console 6 General Messages
```



Erros e Soluções para Windows

Quando você estiver compilando e o programa estiver dando o erro:

exiting with exit code 0.

Verifique se foram incluídos os diretórios binários do OpenCV no [Path](#) do Windows.