# OpenCV 3.0

안재원

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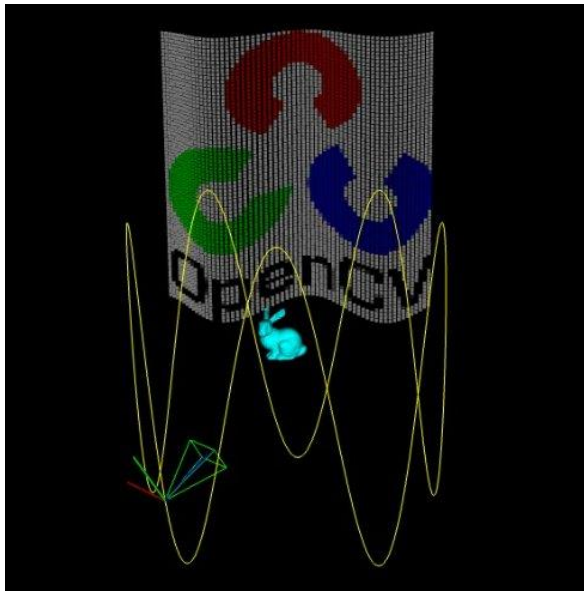
- OpenCV
- Installation
- OpenCV 3.0
- Viz
- Viz Tutorial



# 01 OpenCV

- OpenCV?

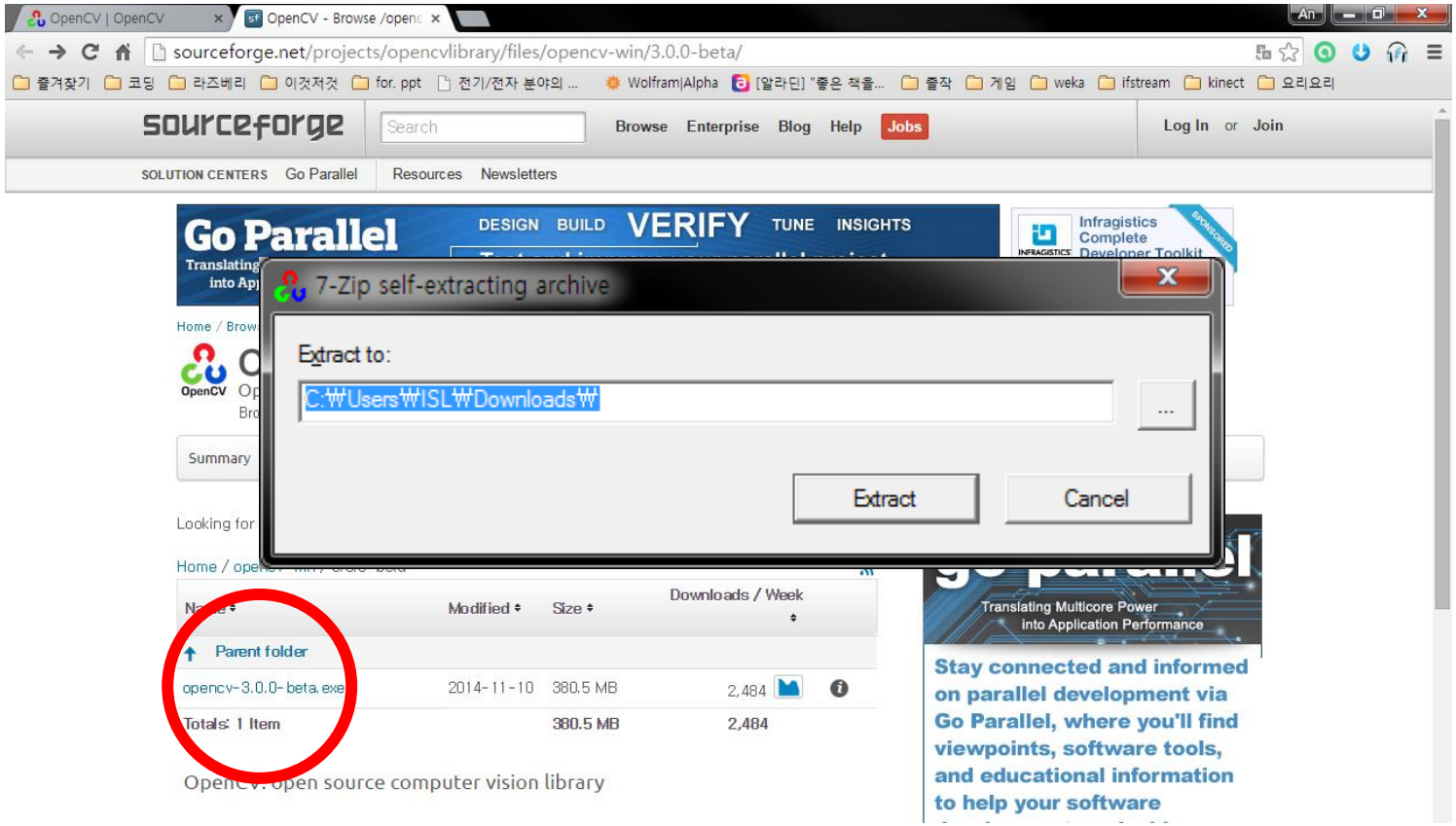

## Open-source Computer Vision library

- 2,500+ Argorithms & Functions
- Real-time performance
- C, C++, Python, Java
- Windows, Linux, Mac OS, iOS, Android
- BSD License

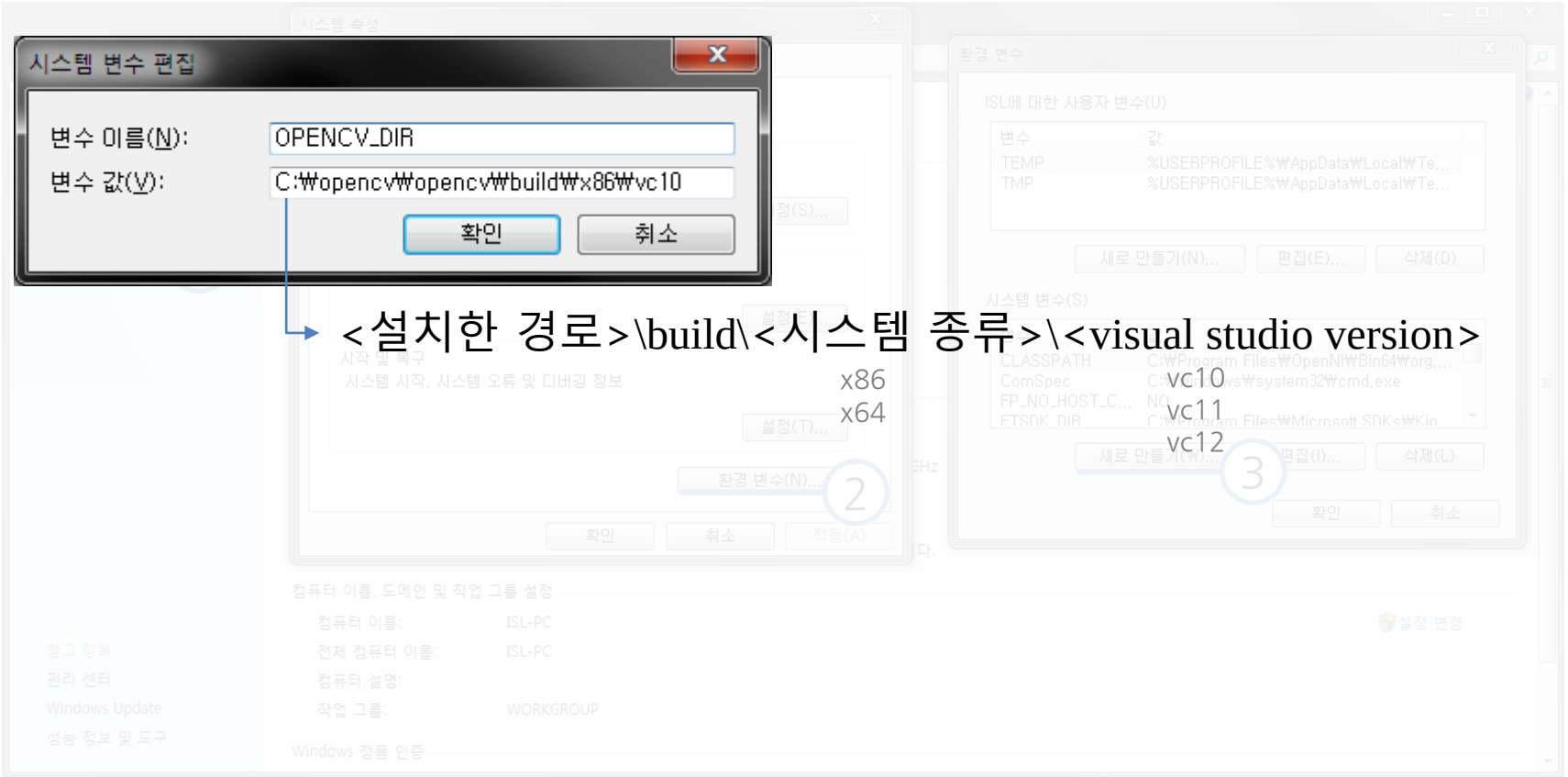
Berkeley Software Distribution License
: 소스코드 공개의 의무가 없으며 상용 소프트웨어에서도 무제한 사용가능


# 02 Installation

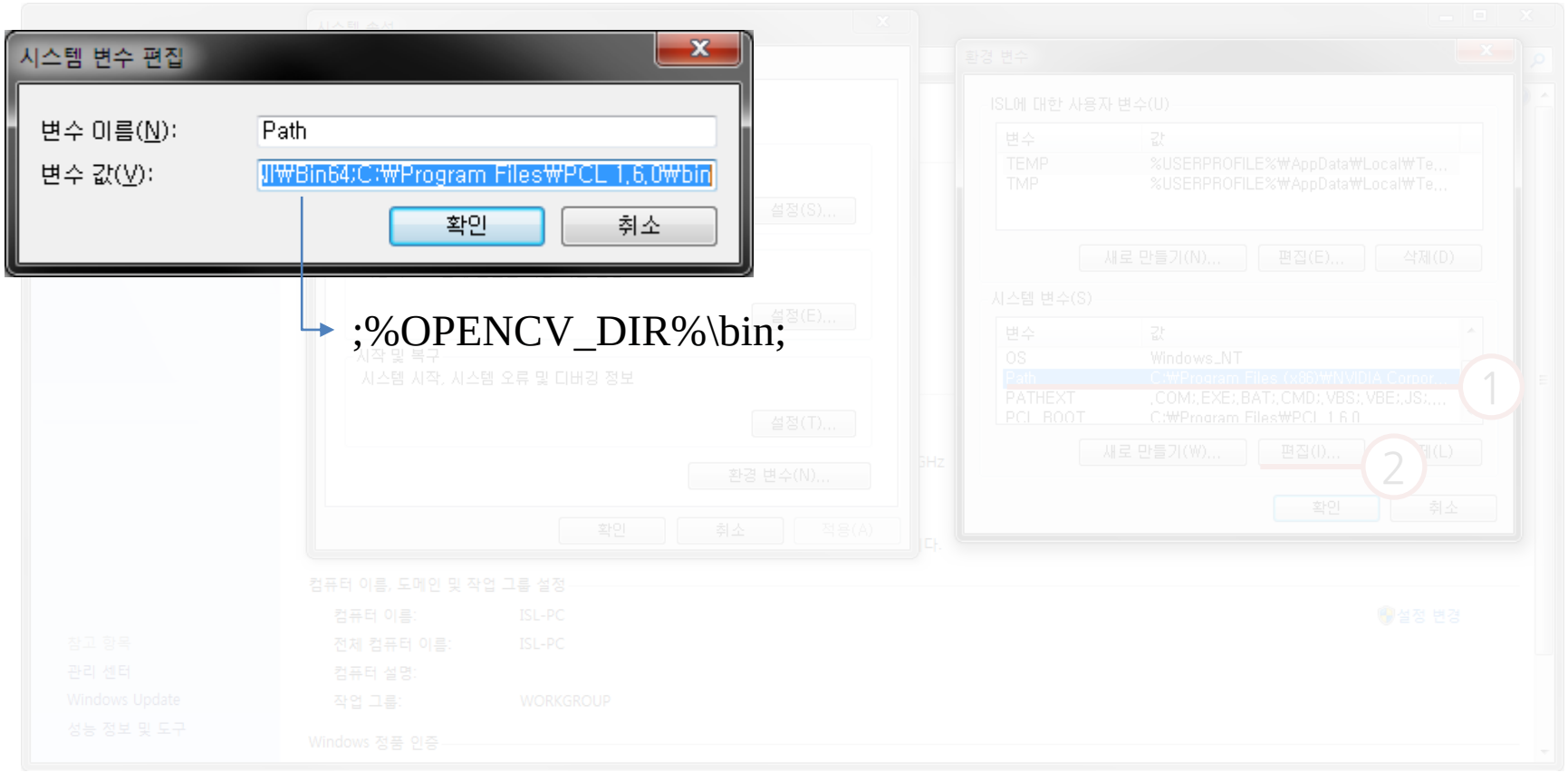
- opencv.org



# 02 Installation

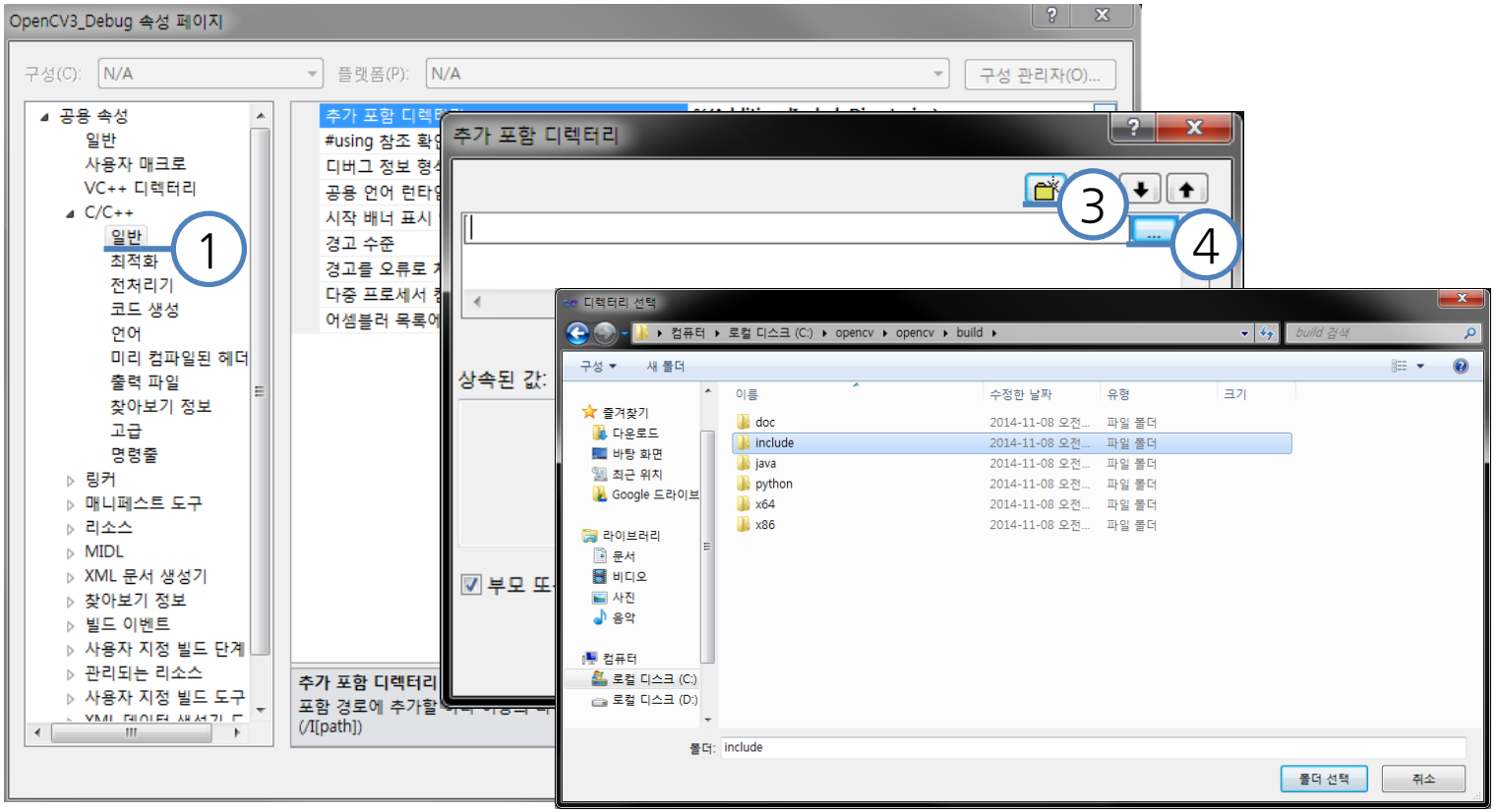


# 02 Installation

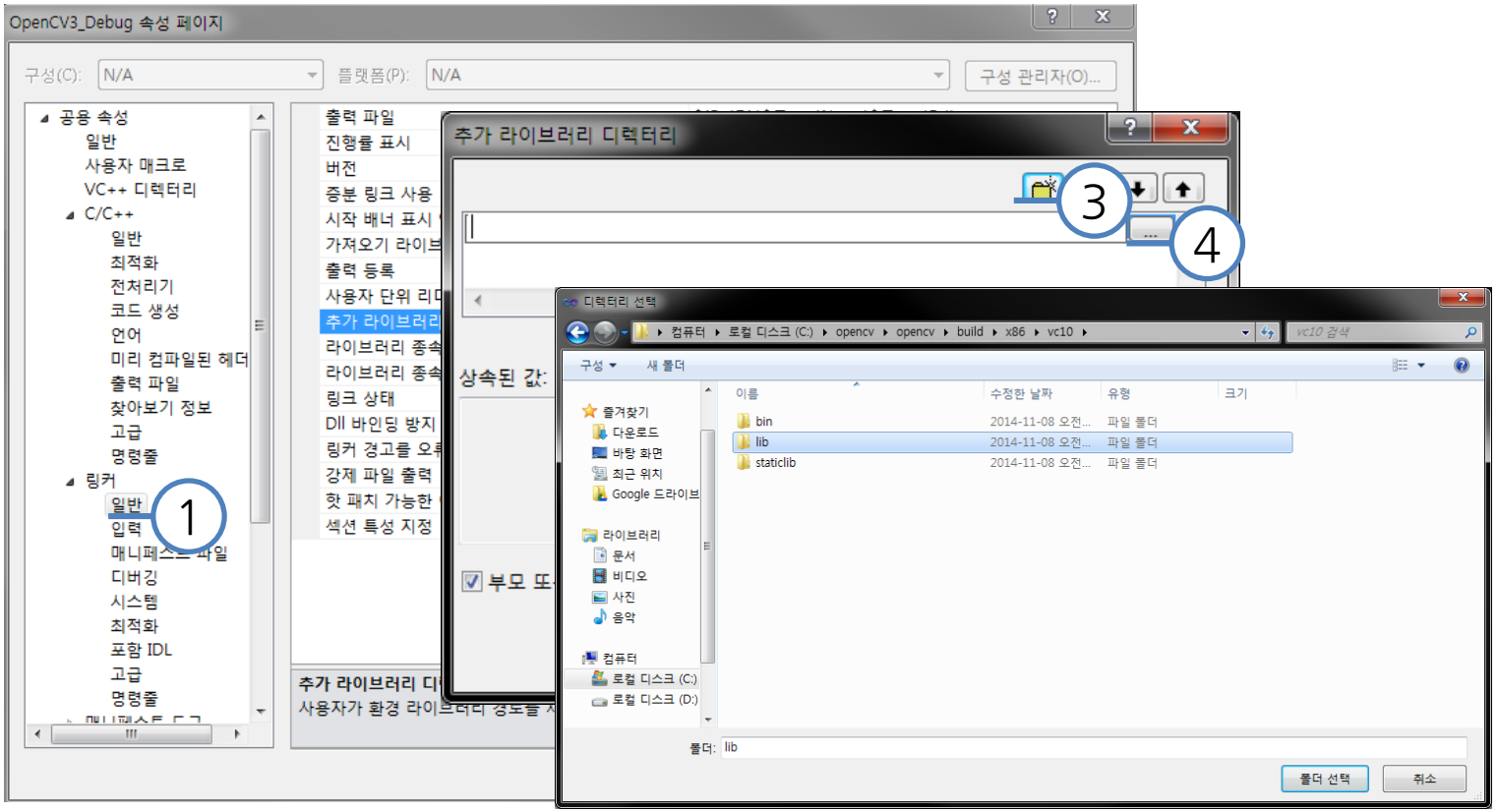


02

# Installation

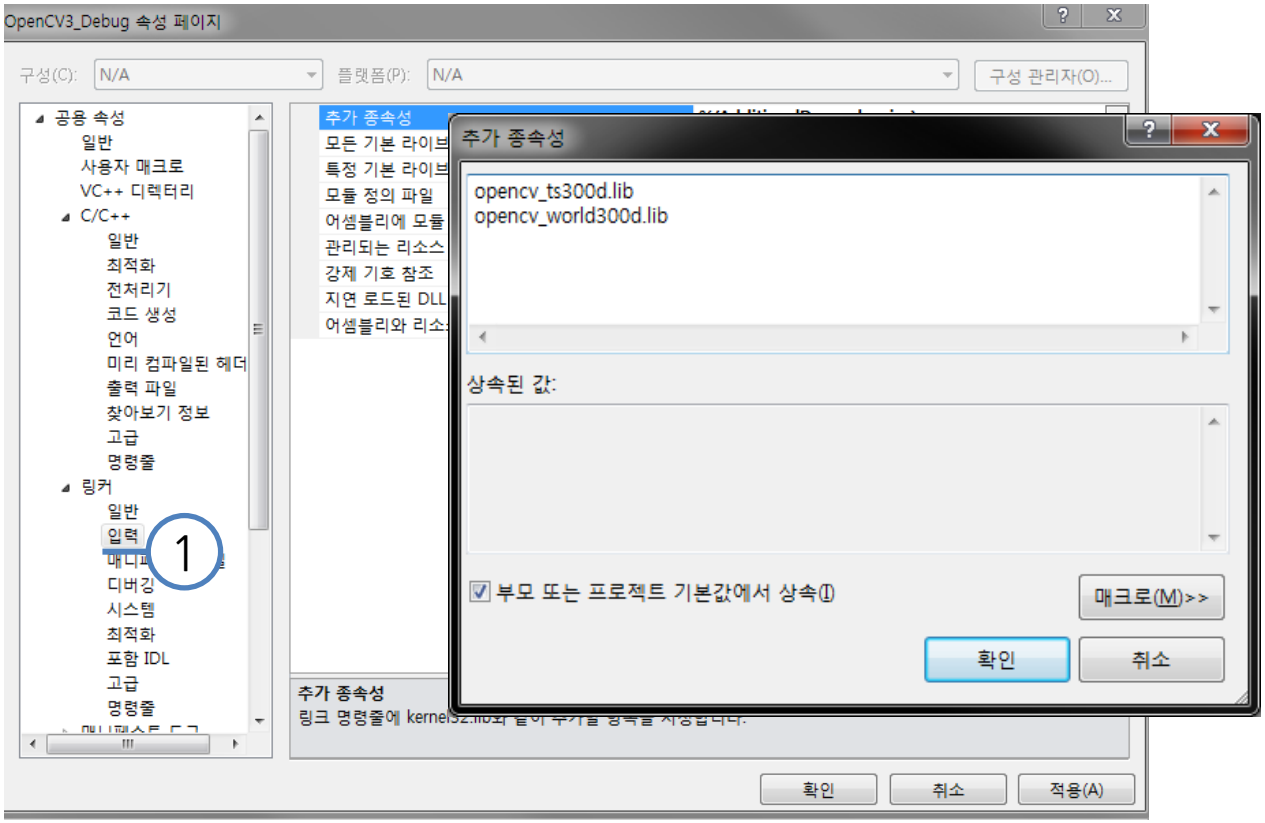


# 02 Installation



02

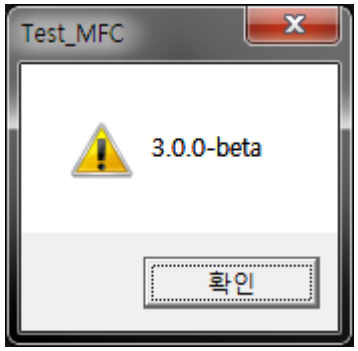
# Installation



02

# Installation

```
101     // TODO: Add extra initialization here
102
103     CString str;
104     str.Format("%s",CV_VERSION);
105     AfxMessageBox(str);
106
```

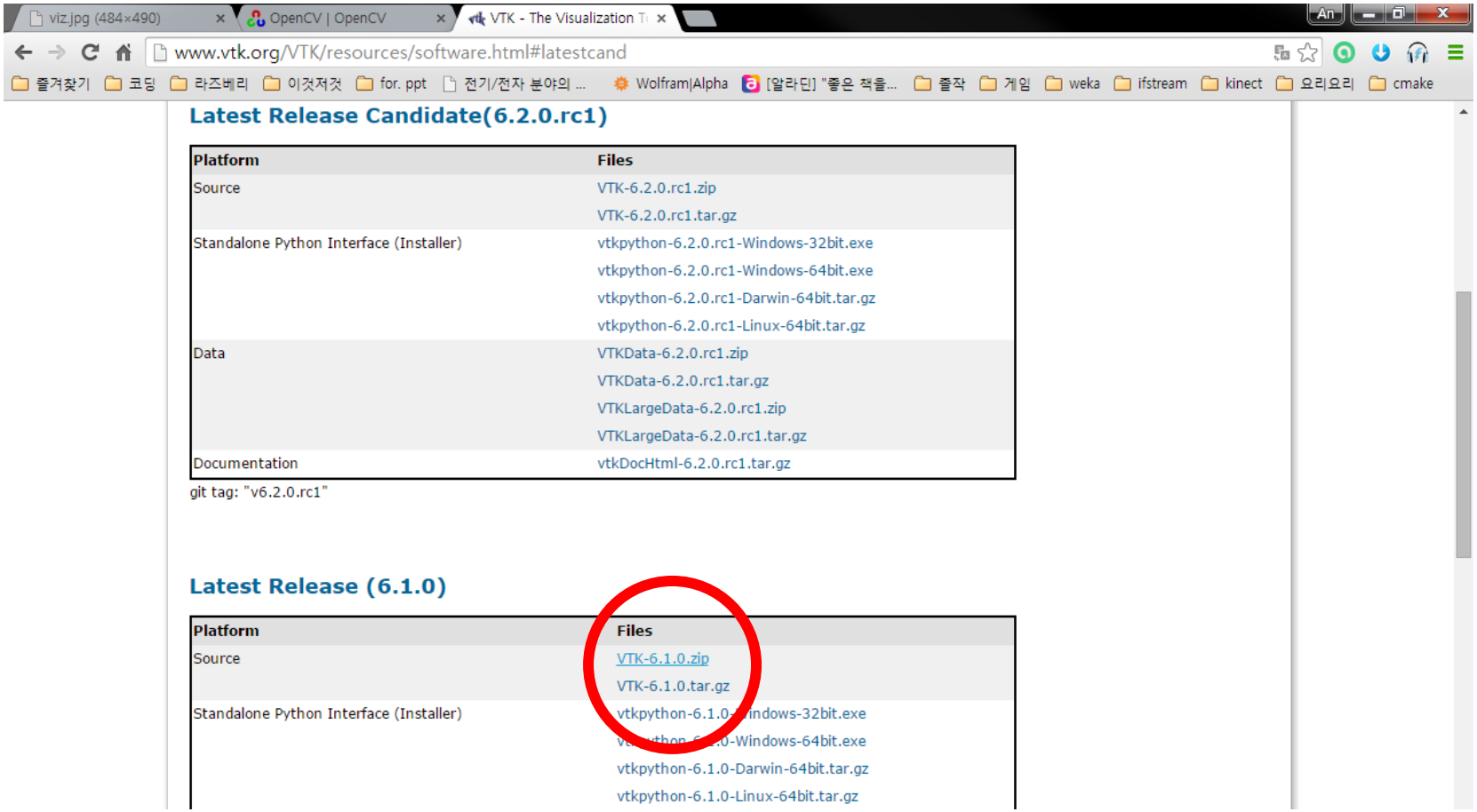


03

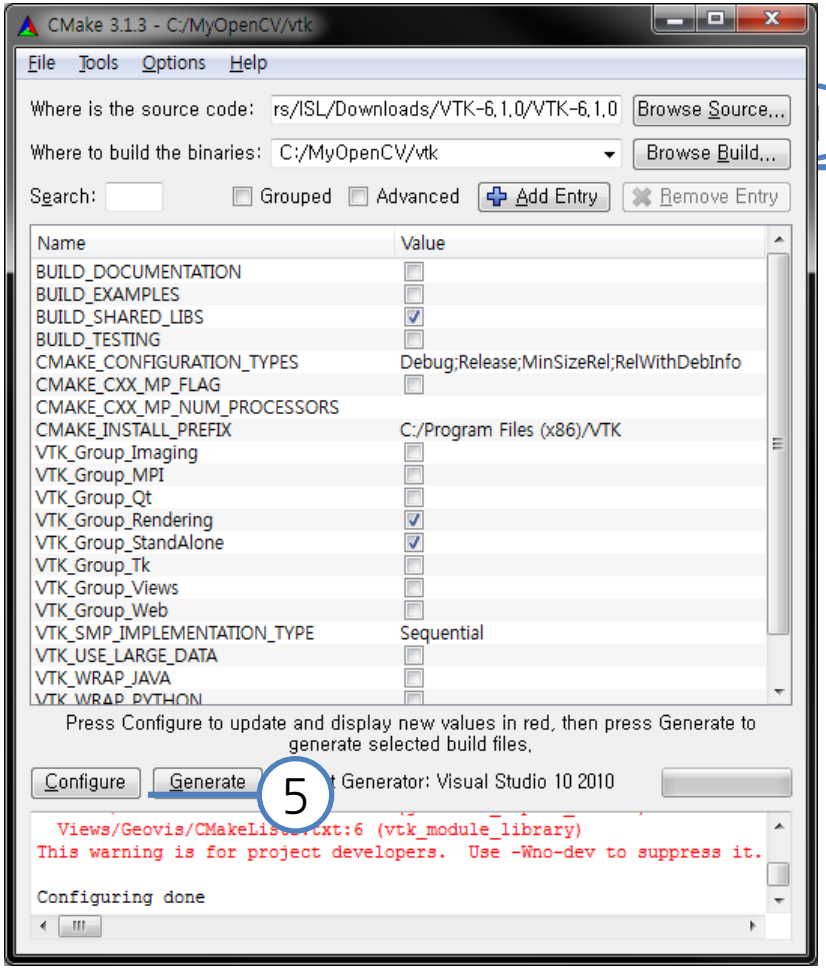
# OpenCV 3.0

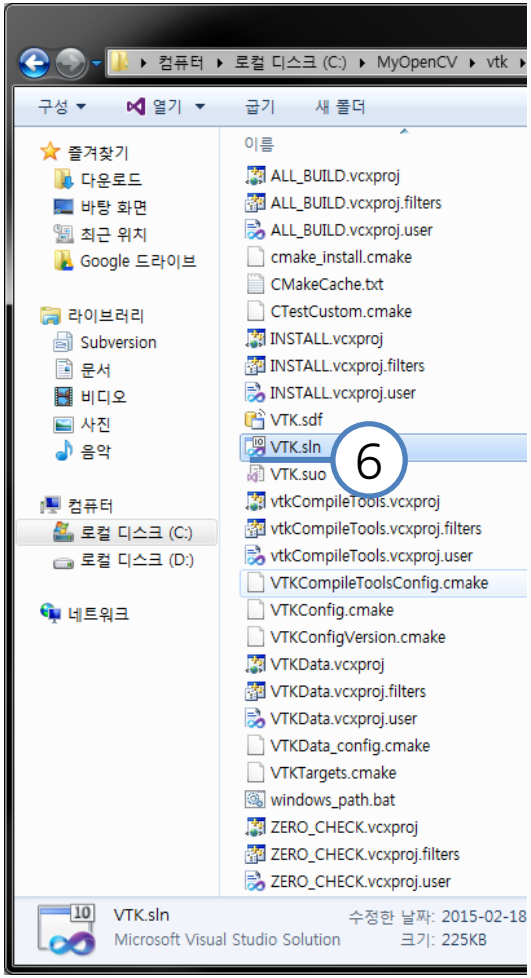
- Text detection and recognition by Lluis Gomez and Stefano Fabri
- HDR by Fedor Morozov and Alexander Shishkov
- KAZE/A-KAZE by Eugene Khvedchenya, the algorithm author Pablo Alcantarilla and some improvements by F. Morozov.
- Smart segmentation and edge-aware filters by Vitaly Lyudvichenko, Yuri Gitman, Alexander Shishkov and Alexander Mordvintsev
- Car detection using Waldboost, ACF by Vlad Shakhuro and Nikita Manovich
- TLD tracker and several common-use optimization algorithms by Alex Leontiev
- Matlab bindings by Hilton Bristow, with support from Mathworks.
- Greatly extended Python bindings, including Python 3 support, and several OpenCV+Python tutorials by Alexander Mordvintsev, Abid Rahman and others.
- 3D Visualization using VTK by Ozan Tonkal and Anatoly Baksheev.
- RGBD module by Vincent Rabaud
- Line Segment Detector by Daniel Angelov
- Many useful Computational Photography algorithms by Siddharth Kherada
- Shape descriptors, matching and morphing shapes (shape module) by Juan Manuel Perez Rua and Ilya Lysenkov
- Long-term tracking + saliency-based improvements (tracking module) by Antonella Cascitelli and Francesco Puja
- Another good pose estimation algorithm and the tutorial on pose estimation by Edgar Riba and Alexander Shishkov
- Line descriptors and matchers by Biagio Montesano and Manuele Tamburanno
- Myriads of improvements in various parts of the library by Steven Puttemans; thank you a lot, Steven!
- Several NEON optimizations by Adrian Stratulat, Cody Rigney, Alexander Petrikov, Yury Gorbachev and others.
- Fast foreach loop over cv::Mat by Kazuki Matsuda
- Image alignment (ECC algorithm) by Georgios Evangelidis
- GDAL image support by Marvin Smith
- RGBD module by Vincent Rabaud
- Fisheye camera model by Ilya Krylov
- OSX framework build script by Eugene Khvedchenya
- Multiple FLANN improvements by Pierre-Emmanuel Viel
- Improved WinRT support by Gregory Morse
- Latent SVM Cascade by Evgeniy Kozhinov and NNSU team (awaiting integration)
- Logistic regression by Rahul Kavi
- Five-point pose estimation algorithm by Bo Li

# 04 Viz


viz.jpg (484×490)
OpenCV | OpenCV
VTK - The Visualization
www.vtk.org/VTK/resources/software.html#latestcand
즐겨찾기 코딩 라즈베리 이것저것 for. ppt 전기/전자 분야의 ... Wolfram|Alpha [알라딘] "좋은 책을... 졸작 게임 weka ifstream kinect 요리요리 cmake
Latest Release Candidate(6.2.0.rc1)
Platform
Files
Source
VTK-6.2.0.rc1.zip
VTK-6.2.0.rc1.tar.gz
Standalone Python Interface (Installer)
vtkpython-6.2.0.rc1-Windows-32bit.exe
vtkpython-6.2.0.rc1-Windows-64bit.exe
vtkpython-6.2.0.rc1-Darwin-64bit.tar.gz
vtkpython-6.2.0.rc1-Linux-64bit.tar.gz
Data
VTKData-6.2.0.rc1.zip
VTKData-6.2.0.rc1.tar.gz
VTKLargeData-6.2.0.rc1.zip
VTKLargeData-6.2.0.rc1.tar.gz
Documentation
vtkDocHtml-6.2.0.rc1.tar.gz
git tag: "v6.2.0.rc1"
Latest Release (6.1.0)
Platform
Files
Source
VTK-6.1.0.zip
VTK-6.1.0.tar.gz
Standalone Python Interface (Installer)
vtkpython-6.1.0-Windows-32bit.exe
vtkpython-6.1.0-Windows-64bit.exe
vtkpython-6.1.0-Darwin-64bit.tar.gz
vtkpython-6.1.0-Linux-64bit.tar.gz

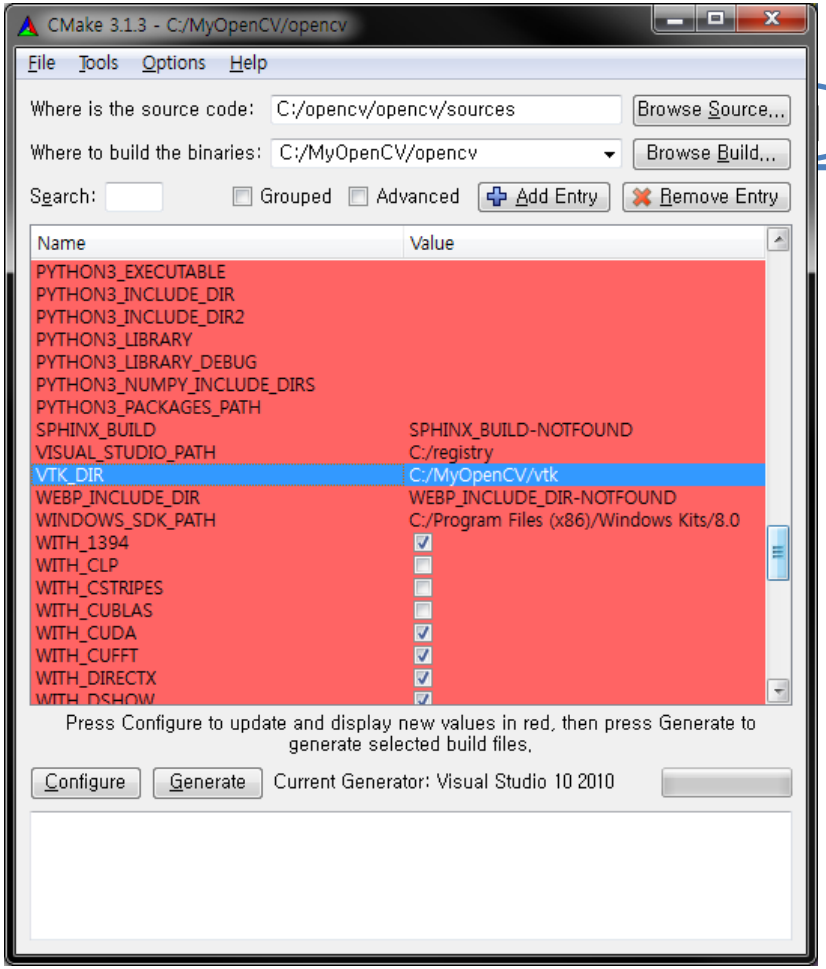
# 04 Viz

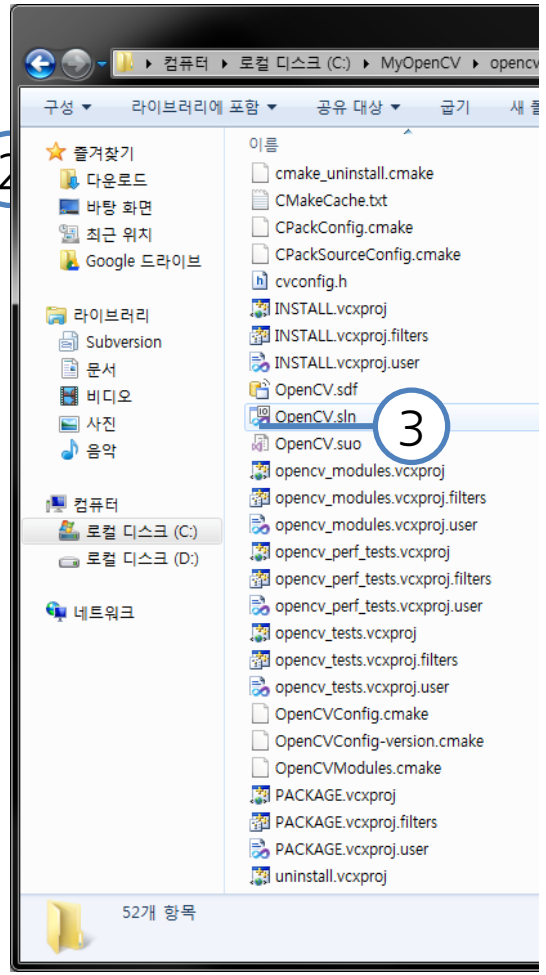

CMake 3.1.3 - C:/MyOpenCV/vtk
File Tools Options Help
Where is the source code: rs/ISL/Downloads/VTK-6.1.0/VTK-6.1.0 Browse Source...
Where to build the binaries: C:/MyOpenCV/vtk Browse Build...
Search: Grouped Advanced Add Entry Remove Entry
Name Value
BUILD_DOCUMENTATION
BUILD_EXAMPLES
BUILD_SHARED_LIBS
BUILD_TESTING
CMAKE_CONFIGURATION_TYPES Debug;Release;MinSizeRel;RelWithDebInfo
CMAKE_CXX_MP_FLAG
CMAKE_CXX_MP_NUM_PROCESSORS
CMAKE_INSTALL_PREFIX C:/Program Files (x86)/VTK
VTK_Group_Imaging
VTK_Group_MPI
VTK_Group_Qt
VTK_Group_Rendering
VTK_Group_StandAlone
VTK_Group_Tk
VTK_Group_Views
VTK_Group_Web
VTK_SMP_IMPLEMENTATION_TYPE Sequential
VTK_USE_LARGE_DATA
VTK_WRAP_JAVA
VTK_WRAP_PYTHON
Press Configure to update and display new values in red, then press Generate to generate selected build files.
Configure Generate Generator: Visual Studio 10 2010
Views/Geovis/CMakeLists.txt:6 (vtk_module_library)
This warning is for project developers. Use -Wno-dev to suppress it.
Configuring done
2
5


컴퓨터 ▸ 로컬 디스크 (C:) ▸ MyOpenCV ▸ vtk
구성 열기 굽기 새 폴더
즐겨찾기
다운로드
바탕 화면
최근 위치
Google 드라이브
라이브러리
Subversion
문서
비디오
사진
음악
컴퓨터
로컬 디스크 (C:)
로컬 디스크 (D:)
네트워크
이름
ALL_BUILD.vcxproj
ALL_BUILD.vcxproj.filters
ALL_BUILD.vcxproj.user
cmake_install.cmake
CMakeCache.txt
CTestCustom.cmake
INSTALL.vcxproj
INSTALL.vcxproj.filters
INSTALL.vcxproj.user
VTK.sdf
VTK.sln
VTK.suo
vtkCompileTools.vcxproj
vtkCompileTools.vcxproj.filters
vtkCompileTools.vcxproj.user
VTKCompileToolsConfig.cmake
VTKConfig.cmake
VTKConfigVersion.cmake
VTKData.vcxproj
VTKData.vcxproj.filters
VTKData.vcxproj.user
VTKData_config.cmake
VTKTargets.cmake
windows_path.bat
ZERO_CHECK.vcxproj
ZERO_CHECK.vcxproj.filters
ZERO_CHECK.vcxproj.user
VTK.sln
Microsoft Visual Studio Solution
수정한 날짜: 2015-02-18
크기: 225KB
6

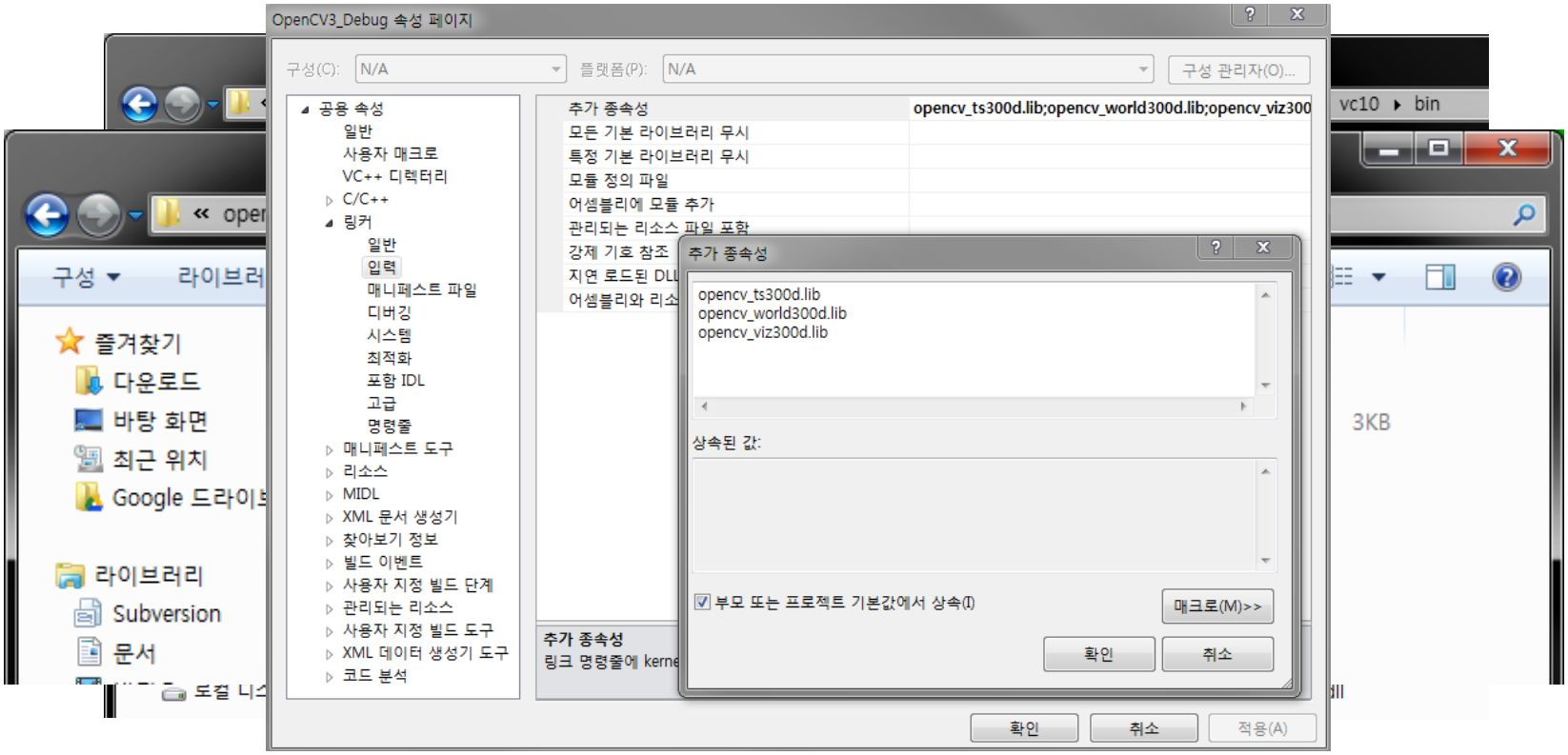
04

# Viz


CMake 3.1.3 - C:/MyOpenCV/opencv
File Tools Options Help
Where is the source code: C:/opencv/opencv/sources
Browse Source...
Where to build the binaries: C:/MyOpenCV/opencv
Browse Build...
Search:
Grouped
Advanced
Add Entry
Remove Entry
Name
Value
PYTHON3_EXECUTABLE
PYTHON3_INCLUDE_DIR
PYTHON3_INCLUDE_DIR2
PYTHON3_LIBRARY
PYTHON3_LIBRARY_DEBUG
PYTHON3_NUMPY_INCLUDE_DIRS
PYTHON3_PACKAGES_PATH
SPHINX_BUILD SPHINX_BUILD-NOTFOUND
VISUAL_STUDIO_PATH C:/registry
VTK_DIR C:/MyOpenCV/vtk
WEBP_INCLUDE_DIR WEBP_INCLUDE_DIR-NOTFOUND
WINDOWS_SDK_PATH C:/Program Files (x86)/Windows Kits/8.0
WITH_1394
WITH_CLP
WITH_CSTRIPES
WITH_CUBLAS
WITH_CUDA
WITH_CUFFT
WITH_DIRECTX
Press Configure to update and display new values in red, then press Generate to generate selected build files.
Configure
Generate
Current Generator: Visual Studio 10 2010


컴퓨터 ▸ 로컬 디스크 (C:) ▸ MyOpenCV ▸ opencv
구성
라이브러리에 포함
공유 대상
굽기
즐겨찾기
다운로드
바탕 화면
최근 위치
Google 드라이브
라이브러리
Subversion
문서
비디오
사진
음악
컴퓨터
로컬 디스크 (C:)
로컬 디스크 (D:)
네트워크
이름
cmake_uninstall.cmake
CMakeCache.txt
CPackConfig.cmake
CPackSourceConfig.cmake
cvconfig.h
INSTALL.vcxproj
INSTALL.vcxproj.filters
INSTALL.vcxproj.user
OpenCV.sdf
OpenCV.sln
3
OpenCV.suo
opencv_modules.vcxproj
opencv_modules.vcxproj.filters
opencv_modules.vcxproj.user
opencv_perf_tests.vcxproj
opencv_perf_tests.vcxproj.filters
opencv_perf_tests.vcxproj.user
opencv_tests.vcxproj
opencv_tests.vcxproj.filters
opencv_tests.vcxproj.user
OpenCVConfig.cmake
OpenCVConfig-version.cmake
OpenCVModules.cmake
PACKAGE.vcxproj
PACKAGE.vcxproj.filters
PACKAGE.vcxproj.user
uninstall.vcxproj
52개 항목

# 04 Viz


OpenCV3_Debug 속성 페이지
구성(C): N/A
플랫폼(P): N/A
구성 관리자(O)...
공용 속성
일반
사용자 매크로
VC++ 디렉터리
C/C++
링커
일반
입력
매니페스트 파일
디버깅
시스템
최적화
포함 IDL
고급
명령줄
매니페스트 도구
리소스
MIDL
XML 문서 생성기
찾아보기 정보
빌드 이벤트
사용자 지정 빌드 단계
관리되는 리소스
사용자 지정 빌드 도구
XML 데이터 생성기 도구
코드 분석
추가 종속성
opencv_ts300d.lib;opencv_world300d.lib;opencv_viz300
모든 기본 라이브러리 무시
특정 기본 라이브러리 무시
모듈 정의 파일
어셈블리에 모듈 추가
관리되는 리소스 파일 포함
강제 기호 참조
지연 로드된 DLL
어셈블리와 리소
추가 종속성
링크 명령줄에 kerne
확인
취소
적용(A)
추가 종속성
opencv_ts300d.lib
opencv_world300d.lib
opencv_viz300d.lib
상속된 값:
부모 또는 프로젝트 기본값에서 상속(I)
매크로(M)>>
확인
취소
구성
라이브러
즐겨찾기
다운로드
바탕 화면
최근 위치
Google 드라이
라이브러리
Subversion
문서
vc10 ▸ bin
3KB

05

# Viz Tutorial

```
#include "opencv2/viz.hpp"
#include "opencv2/calib3d.hpp"
```

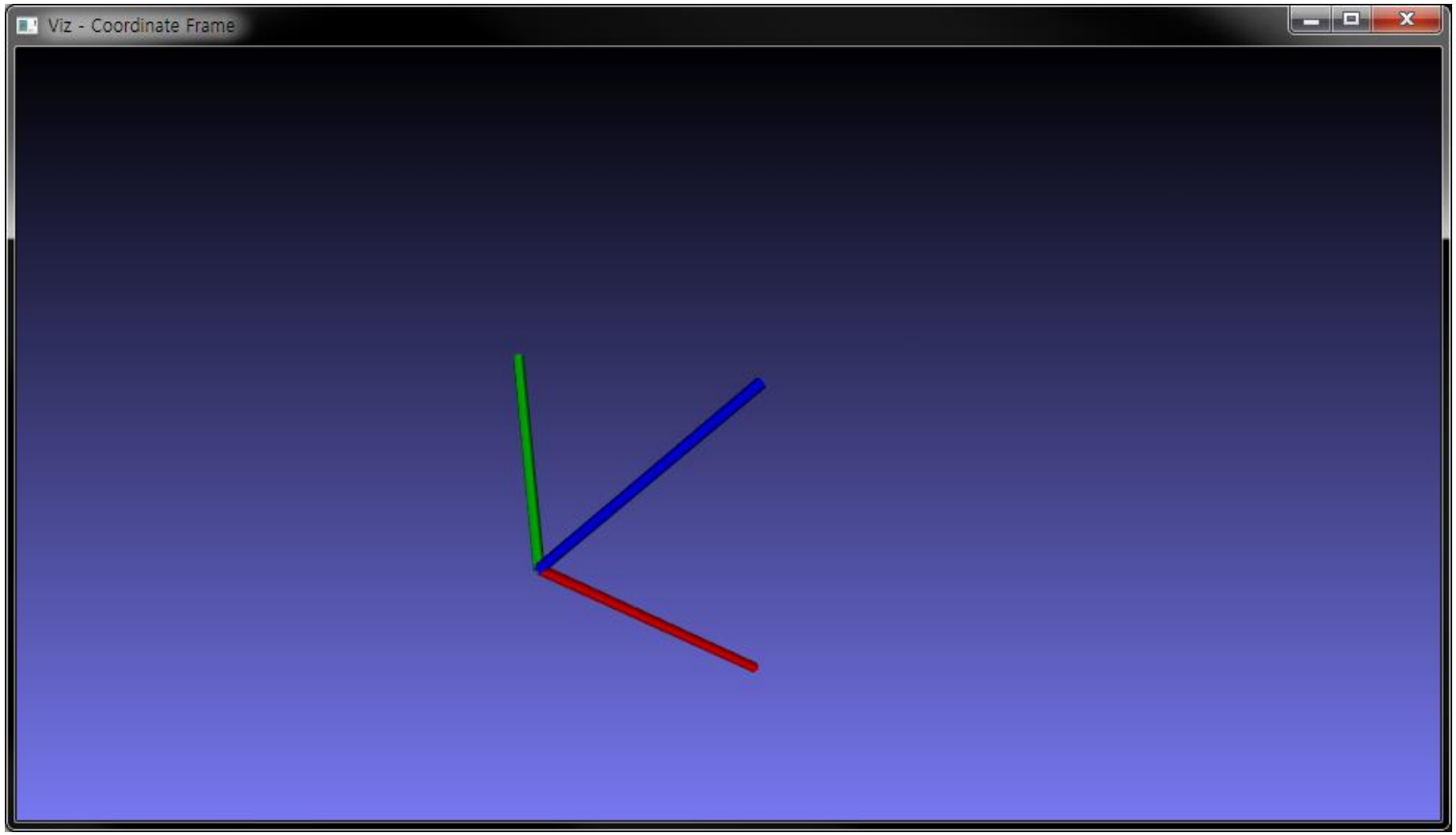
```
/// Create a window
viz::Viz3d myWindow("Coordinate Frame");

/// Add coordinate axes
myWindow.showWidget("Coordinate Widget", viz::WCoordinateSystem());

while(!myWindow.wasStopped())
{
    myWindow.spinOnce(1, true);
}
```

※OpenCV 3.0.0-dev documentation page 참고(http://docs.opencv.org/trunk/index.html)

# 05 Viz Tutorial



# 감사합니다.