CSCI435/CSCI935 Software Installation Guide

July 2020

Overview

This document provides brief instructions to install openCV binary, openCV-python and MS Visual C/C++ 2017. It is only for the following versions and environment. The instructions may not be applicable to other versions.

OS: MS Window 10
OpenCV-4.4.0: Release, 18 July 2020
Python-3.8.5: Release, 20 July 2020
MS Visual Studio 2017:

MS Visual Studio 2017

MS Visual Studio is needed if you are to complete the assignments using C/C++. The latest version is MS Visual Studio 2019 with the compiler being v16. This version is currently not supported by the openCV binary release. Therefore, MS Visual Studio 2017 community version is used. It can be downloaded freely from

https://visualstudio.microsoft.com/vs/older-downloads/

Following the step-by-step installation wizard to install it for ALL users to the default directories.

OpenCV-4.4.0

This is the latest version now. The pre-compiled binary package released by official site can be downloaded from

https://opencv.org/releases/

Note that this package does not include any non-free modules. A binary package with non-free modules has been made available on the subject Moodle. You can chose either of the package if the non-free modules are not required. If the non-free modules are required, you have to use the package including the non-free modules.

Package	Note
`Opencv-4.4.0-vc-14-vc15.exe`	• Self-extraction file • Without non-free modules • Support MS Visual C/C++ 2015 (v14) and 2017 (v15) • Support python-3.8.x
`openCVex-Python-4.4.0-vc15-x64-Release`	• With all non-free modules • Support MS Visual C/C++ 2017 (vc15), 64 bits C/C++ • Support python-3.8.x

Installation:

1. Extract all files to a directory, for instance `C:\opencv-4.4.0` or C:\openCVex-4.4.0
2. Update or create (if there is no existing one) system or user environment variables
   - Set `OPENCVDIR` to the right directory of your opencv directory, e.g. "`C:\opencv-4.4.0\build\`" or "`C:\openCVex-4.4.0`", in which you will find the following sub-directories: `bin, etc, include, python` or `python_loader` and `x64`
   - Include `%OPENCVDIR%\x64\vc15\bin` in the environmental variable `PATH`
   - Set `PYTHONPATH` to `%OPENCVDIR%\python\` or `%OPENCVDIR%\python_loader\`

More information can be found at the following link, but be mindful that some information may be not applicable to your system.

https://docs.opencv.org/4.4.0/df/d65/tutorial_table_of_content_introduction.html

Python-3.8.5 and used packages

This is the latest version of Python. It is available from the subject Moodle or at

https://www.python.org/downloads/

Installation:

1. Following the installation wizard, choose “install for all users” and “update variable `PATH`”. After installation, you should see the following or similar included in your `PATH` environmental variable:
   `C:\Program Files\Python38\Scripts\; C:\Program Files\Python38\`
2. Install `numpy` package using “`pip install numpy`” in a command terminal.
3. Install `matplotlib` package using “`pip install matplotlib`” in a command terminal.
4. Open Python and type following codes in Python terminal to see if openCV has been linked to Python properly or not

```
>>> import cv2 as cv
>>> print( cv.__version__ )
```

How to build applications with OpenCV inside the "Microsoft Visual Studio 2017"

You need to make sure your MS Visual C/C++ project be able to find opencv header files and required static libs (e.g. “`opencv_world440.lib`” for release mode) to be linked into your application. Details can be found at

https://docs.opencv.org/4.4.0/dd/d6e/tutorial_windows_visual_studio_opencv.html