Installation and configuration of

Visual Studio 2015 for OpenCV 2.4.13

(For Win 10 and C/C++)

1. Download OpenCV 2.4.13 (.exe file) from http://opencv.org/downloads.html .
2. Run the .exe file and install OpenCV library in C: folder. You can do it anywhere as per your choice. I downloaded the library in C: folder.
3. Go to https://intranet.cecs.pdx.edu/dreamspark/ and enter your MCECS login details.
4. Download **Web Installer** version of **Visual Studio Community 2015 Update 2** which is the 5th option in the list. I would highly recommend to install this version and not any other.
5. Run the installer and select the following options in custom version:
    a. Visual Studio 2015 Update 3
    b. Programming languages (Only select Visual C++ option. Select python option **only** if you are using python for building OpenCV programs)
    c. Common tools

    It will take a lot of time to install so stay calm! :)

NOTE: Before installing please disable antivirus and update your Win10 OS to latest version (Start-> type 'check for updates' and install latest windows update).

6. After installation **if and only if** you get an error message stating that SDK has not been installed or xyz has not been installed (yellow warning symbol besides them) then:
    a. Go to add or remove programs. Scroll down to Microsoft Visual Studio Community 2015 Update 2 and click modify.
    b. In the new dialogue box click repair and let it complete the procedure (which again will take a lot of time).

Before, moving any further you need to make sure that VS 2015 is installed correctly. The easiest way to do this is to write a small non OpenCV code, build it and run it. If you are unable to install VS 2015 then don't proceed further. Try to fix the problem or mail me / professor. We will be more than willing to help you all.

7. Go to Start menu-> type advanced-> click view advanced system setting-> Environment variables. If you are not able to get it then go to start-> type 'about your PC' and click that option-> Scroll down to System Info -> Advanced system setting (left hand side) -> Environment variables.
8. In system variables (lower half of the window), search for **PATH** and click edit. Add a new entry: C:\opencv\build\x86\vc12\bin and press OK.
9. Now we have to create 2 new variables by clicking on **New** option in the system variables (lower half of the window). Details of those variables are:

   a. Variable name: OPENCV_DIR and value: C:\opencv\build\x86\vc12\lib
   b. Variable name: OPENCV_INC and value: C:\opencv\build\include
10. Click OK in the consecutive windows and now open VS 2015.
11. We need to add missing dll files- MSVCP120D.dll and MSVCR120D.dll (From lecture slides)
   a. You can find them at https://www.dll-files.com/msvcr120d.dll.html and https://www.dllfiles.com/msvcp120d.dll.html
   b. Download both the 64 and 32 bit versions. Put the 64-bit version in C:\Windows\System32 and the 32-bit version in C:\Windows\SysWOW64
12. Create a new project by clicking on File-> Project-> Win32 console application and name your application.
13. Press next-> check empty project and click Finish.
14. Add a new source file by right clicking on Source folder (under your project name on RHS of the window) -> Add-> new item. Select C++ file option and name your file.

- **Please read the following steps carefully for successful execution of OpenCV application.**

15. Right click on project name-> properties. On the top of the new window make sure that the following options are present:

    Configurations: All

    Platform: Active (x32)

16. Go to VC++ directories and include the paths given below in both options: **Include directories** and **library directories** (double click on include directories ->edit-> in new window add both the paths. Repeat this for library directories option too)
   a. C:\opencv\build\x86\vc12\lib
   b. C:\opencv\build\include
17. Go to linker-> general and add the above paths to **additional directories** option. In the general tab go to "**Use library dependency input**" option and select **YES.**
18. Now go to linker-> input-> additional dependency and copy paste the lib files given below:

    opencv_calib3d2413d.lib

    opencv_contrib2413d.lib

    opencv_core2413d.lib

    opencv_features2d2413d.lib

    opencv_flann2413d.lib

    opencv_gpu2413d.lib

    opencv_highgui2413d.lib

    opencv_imgproc2413d.lib

    opencv_legacy2413d.lib

opencv_ml2413d.lib

opencv_nonfree2413d.lib

opencv_objdetect2413d.lib

opencv_ocl2413d.lib

opencv_photo2413d.lib

opencv_stitching2413d.lib

opencv_superres2413d.lib

opencv_ts2413d.lib

opencv_video2413d.lib

opencv_videostab2413d.lib

19. Type your openCV C++ or C code. For now copy paste professor's code.
20. Right click on project name -> Build

- NOTE: If you do mistake in the above procedure then your application won't build. It will give you errors.

21. Again right click on project name -> properties -> Debugging-> Command arguments-> Add the path of your image followed by \image_name.img_type

    There are sample images in OpenCV library and I have used one of those image whose path is:

    C:\opencv\sources\samples\cpp\logo.png

22. RUN your program (Debug-> start without debugging)

Note: You can mention the path in the code itself. The code given by professor accepts image path from command line argument and hence we performed step 20. You can also run the program from DOS command window. Professor will show that in class.