Guide to Getting Fingerprint Recognition to Compile in Visual Studio:

1. Download the Fingerprint Recognition repo from Github:

<https://github.com/nflash24/Intro-to-Software-Engineering>

1. Download and install the latest version (4.5.0) of OpenCV: <https://opencv.org/releases/>

Make sure to remember which directory you install it in, as we will need that directory later. I recommend you install it in your C root folder: (C:\) but it is not necessary.

1. Include OpenCV in your system path by setting it in your Environment Variables.

Search for ‘Environment Variables’ in Windows to get to this window and click on the highlighted button here.

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Under ‘System Variables’ find ‘Path’, click ‘Edit’, and then in the new window, ‘New’.

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Add **$OPENCV\build\x64\vc15\bin** where $OPENCV is the directory of your installation of OPENCV. For example, if I installed OpenCV in my C:\ root directory, I would add: **C:\opencv\build\x64\vc15\bin**. Click OK to close the windows.

1. Open the Fingerprint Recognition project in Visual Studio by opening the **Fingerprint\_Recognition.sln** file.



When you open the solution file, you will be prompted to retarget the solution. The default options should be fine, click OK.

This is necessary as the solution needs to be retargeted as it was built on an old version of the Windows SDK and VS.

1. Once the project is retargeted and opens, navigate to the project’s properties by clicking the Project menu in the menu bar and clicking **Fingerprint\_Recognition Properties** at the bottom.

A screenshot of a cell phone screen with text

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Navigate to the **C/C++>General** menu on the left side and find Additional Include Directories. You will need to add **$OPENCV\build\include** where $OPENCV is the directory of your installation of OpenCV once again. Using my example in the C:\ root folder: C:\opencv\build\include

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Navigate to the **Linker>General** menu and find Additional Library Directories. Add **$OPENCV\build\x64\vc15\lib**

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Navigate to the **Linker>Input** menu and find Additional Dependencies. Add **$OPENCV\build\x64\vc15\lib\opencv\_world450.lib**

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1. Some minor code changes are also necessary. On lines 55 and 59 in main.cpp, modify the parameters so they match this:

55:

pair<Mat, vector<pair<float, float>>> returned = orientation(NULL, NULL, NULL, NULL, NULL, src, block\_size);

59:

pair<Mat, vector<pair<float, float>>> returned2 = orientation(&SP, X, Y, O, T, src, 7, true);

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On line 13 in orientation.hpp, modify the parameters so they match this:

pair<Mat, vector<pair<float, float>>> orientation(int\* SP, int X[], int Y[], unsigned char O[], unsigned char T[], Mat src, int size = 8, bool coredelta = false) {



These code modifications are necessary due to Visual Studio requiring default arguments be placed after non-default arguments.