

## Display Image from File using GPU (C++ / OpenCV)

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I'm following an example to use the GPU to manipulate and display an image from file with C++ / OpenCV (from here: <http://on-demand.gputechconf.com/gtc/2013/webinar/opencv-gtc-express-shalini-gupta.pdf>). The code is:

```
#include <opencv2/opencv.hpp>
#include <opencv2/gpu/gpu.hpp>
#include <opencv2/gpu/gpumat.hpp>
using namespace cv;
int main()
{
    Mat src = imread("car1080.jpg", 0);
    if (!src.data) exit(1);
    gpu::GpuMat d_src(src);
    gpu::GpuMat d_dst;
    gpu::bilateralFilter(d_src, gpu::Canny(d_dst, d_dst, 35, 200, 3);
    Mat dst(d_dst);
    imshow("out.png", dst);
    return 0;
}
```

However, I keep getting an error stating `d_dst` is undefined for the `gpu::GpuMat d_src(src)` and `gpu::GpuMat d_dst` sections. From what I've read this is because I haven't included a file, a declaration or something else.

Below is a list of my additional dependencies:

```
opencv_calib3d249d.lib
opencv_contrib249d.lib
opencv_core249d.lib
opencv_features2d249d.lib
opencv_flann249d.lib
opencv_gpu249d.lib
opencv_highgui249d.lib
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opencv_superres249d.lib
opencv_ts249d.lib
opencv_video249d.lib
opencv_videostab249d.lib
```

I'm new to all of this so I'm unsure whether I've missed an additional dependency, a header or need to install / configure some GPU component with Visual Studio 2012.

Any help would be greatly appreciated! Thanks!

**UPDATE:** Below is my new code which compiles fine; however, no image is displayed even when the `imwrite` line is replaced with `imshow`. **EDIT** I now realise that my code is getting stopped at the `if (!src.data) exit(1);` line presumably because the image file is not being read properly?

```
#include <stdio.h>
#include <direct.h>
#include "fstream"
#include "iostream"
#include <vector>
#include "opencv2/core/core.hpp"
#include "opencv2/core/gpumat.hpp"
#include "opencv2/core/opencv_interop.hpp"
#include "opencv2/gpu/gpu.hpp"
#include "opencv2/ml/ml.hpp"
#include "opencv2/highgui/highgui.hpp"
#include "opencv2/contrib/contrib.hpp"
#include "opencv2/video/tracking.hpp"
#include "opencv2/imgproc/imgproc.hpp"

int main(){
    Mat src = imread("car.jpg", 0);
    if (!src.data) exit(1);

    gpu::GpuMat d_src(src);
    gpu::GpuMat d_dst;

    gpu::bilateralFilter(d_src, d_dst, 15, 80, 80);

    Mat dst(d_dst);
    imwrite("out.png", dst);
    return 0;
}
```

Note - I probably don't need all those `#includes` but oh well.

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edited Jul 28 '15 at 1:09

asked Jul 24 '15 at 2:16

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If you want to use GPU based computations you have 3 options 1) OpenCL (OCL) or 2) Cuda based GPU processing 3) OpenGL based GPU processing. Since you are using opencv 2.4.9 & no OCL or Opengl code! i assume you are using cuda. In that case you need to build opencv with cuda enabled & you need to include those cuda libs & dlls! – [Balaji R](#) Jul 24 '15 at 3:59

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Try linking library inside folder `x64` – [udit043](#) Jul 24 '15 at 7:05

How do I link it? (Pardon my ignorance - this is all new to me). Thanks for the help! – [MSTTm](#) Jul 26 '15 at 23:25

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Try to include core.hpp. In my case it is located in opencv2/core/core.hpp

And you have to fix your function calls for `bilateralFilter(...)` and `Canny(...)`. The argument number is wrong.

Something like this:

```
int main(){
Mat src = imread("car.jpg", 0);
if (!src.data) exit(1);

gpu::GpuMat d_src(src);
gpu::GpuMat d_dst;

gpu::bilateralFilter(d_src, d_dst, 15, 80, 80);

Mat dst(d_dst);
imwrite("out.png", dst);
return 0;
}
```

You haven't mentioned anything about your development environment... (Win,Linux,Android,OpenCV version).

I work on a tegra board so things might be a little bit different for me.I tried out the example on my development environment. And it worked just fine.



cool hu!

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answered Jul 24 '15 at 7:04



phill EuL

76 • 4

Thank you very much for the help! I probably should have mentioned that I'm working in Windows on Visual Studio 2012 with OpenCV 2.4.9. Unfortunately I still get a linking error which I assume is because I haven't linked my libraries properly? Do I need to install anything extra (I only have VS2012 and OpenCV installed currently)? – [MSTTm](#) Jul 26 '15 at 23:39

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like udit043 has mentioned, this sounds like a problem with linking the library according to your system architecture. Check the environment variable PATH (Task Menu -> System -> Advanced System Settings link -> In System Properties the Advanced tab -> Environment Variables) if opencv library path is there. Additionally, check your build properties if you have selected the right system architecture according to the used opencv library. This link explains it quite good: [karanjthakkar.wordpress.com/2012/11/21/...](http://karanjthakkar.wordpress.com/2012/11/21/) – [phill EuL](#) Jul 27 '15 at 6:24

Using those instructions I can now compile my code without any error - thank you very much! However, now when the code runs it displays no image. Check update for new code.

– [MSTTm](#) Jul 28 '15 at 0:54

As your program stops reading the image... That's just a guess, as I do not have a system here to test it but you might have to include imgcodecs.hpp to read certain image formats.

– [phill EuL](#) Jul 28 '15 at 6:04

I'm only trying to display a .jpg file which can be displayed through OpenCV without needing the imgcodecs.hpp. I believe my problem relates to setting up Visual Studio for GPU use - I tried using CMake but ran into lots of problems. Thanks for the help. – [MSTTm](#) Jul 31 '15 at 0:11


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



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