GDI32 Functions: [URL](http://www.andreavb.com/API_GDI32.html)

**Fast Image Capturing/Painting:** BitBlt – Create a Form with tiled picture Background, Copy what you see in the Screen or in a Form into the clipboard [[Give 28FPS]]

<http://www.codeproject.com/Articles/6710/Using-BitBlt-to-Copy-and-Paste-Graphics>

http://www.codeproject.com/Tips/240428/Work-with-Bitmaps-Faster-in-Csharp

**Fast Image Difference:** The Bitmap class has GetPixel and SetPixel methods that let you acquire and change color of chosen pixels. These are pathetically slow (may use Bitmap.LockBits method and the BitmapDataclass… to speed up a little only). See <http://www.codeproject.com/Articles/617613/Fast-pixel-operations-in-NET-with-and-without-unsa>

<http://www.codeproject.com/Articles/1080193/Fast-image-processing-in-Csharp>

<http://www.codeproject.com/Tips/240428/Work-with-Bitmaps-Faster-in-Csharp>

**Why not CUDA ?**

* **NVIDIA : CUDA or OpenCL**
* **AMD/Intel: OpenCL**

: Above URL uses Bitmap.LockBits with Marshal.Copy to get array out and do parallel processing to obtain the desired result.

**High Speed Graphics Using BitBlt [NET DrawImage is Slow]:** <http://www.codeproject.com/Articles/6710/Using-BitBlt-to-Copy-and-Paste-Graphics>

Below URL creates empty bitmap and allows you to change its pixels

<http://www.codeproject.com/Articles/16403/Fast-Pointerless-Image-Processing-in-NET>

**LIBRARIES:**

**ImageProcessor:** <http://imageprocessor.org>

**EmguCV:** <http://www.emgu.com/wiki/index.php/Main_Page> [[NET Wrapper to OpenCV]]

* Supports CUDA, OpenCL
* Under GPL and Written in C#

**DotImaging**: <https://github.com/dajuric/dot-imaging>

* Very simple library
* Point, Size, Rectangle
* IO, Bitmap Functions

**CUDAfy**

<http://www.codeproject.com/Articles/572583/CUDA-Programming-Model-on-AMD-GPUs-and-Intel-CPUs>

CUDAfy.NET is a powerful open source library for non-graphics programming on NVIDIA Graphics Processing Units (GPU) from Microsoft .NET. Recently support for AMD GPUs and x86 CPUs has been added. This brings the CUDA programming model to devices beyond those from NVIDIA.

Accord.NET

AForge.NET