GPU Sample Task

The following task is to be completed in C/C++ using a GPU compute API of your choice -- CUDA or OpenGL Compute are preferred but OpenCL is acceptable. Please deliver source code, working binary and any required resources for Windows or Linux.

**Base Task**

Using an image of your choice apply a Morphological Laplacian operator to the 3 color bands of the image independently. Use a 5x5 disk structuring element. Save the processed result to disk. Provide performance statistics and an estimate of MPixels/s of processing throughput excluding I/O.

The input image must be 1920x1080.

All processing except I/O should take place on the GPU.

**Optional Tasks**

* Display the input image and processed result
* Support a YUV420P formatted image as the input image. Convert to RGB on the GPU prior to processing.
* Provide an option to display the intermediate results (if any) while processing
* Support different sized and shaped structuring elements
* Process an input image sequence or video in real time

**Examples:**



