CUDA SAMPLES GUIDE TO NEW FEATURES

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Application Note

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Chapter 1. OVERVIEW OF NEW FEATURES

NVIDIA® CUDA™ Toolkit version 4.2 introduces some exciting new features and capabilities. To illustrate the capabilities and advantages of the new features, the CUDA SDK includes many new and improved code samples. In addition, existing code samples have been upgraded to take advantage of the new features. This document serves as a guide to the new code samples as they relate to the new CUDA Toolkit Version 4.2 and Version 4.2 feature list.

1.1 CUDA VERSION 4.2 HIGHLIGHTS

- Enable native support for Kepler GPUs (SM 3.0). All SDK projects have been updated accordingly.
- Added `segmentationTreeThrust`

1.2 NEW CODE SAMPLES IN CUDA 4.2

`segmentationTreeThrust` (New!)

This example demonstrates a method to build image segmentation trees using Thrust. This algorithm is based on Boruvka's MST algorithm.

1.3 CODE SAMPLES IN CUDA 4.1

`MersenneTwisterGP11213`

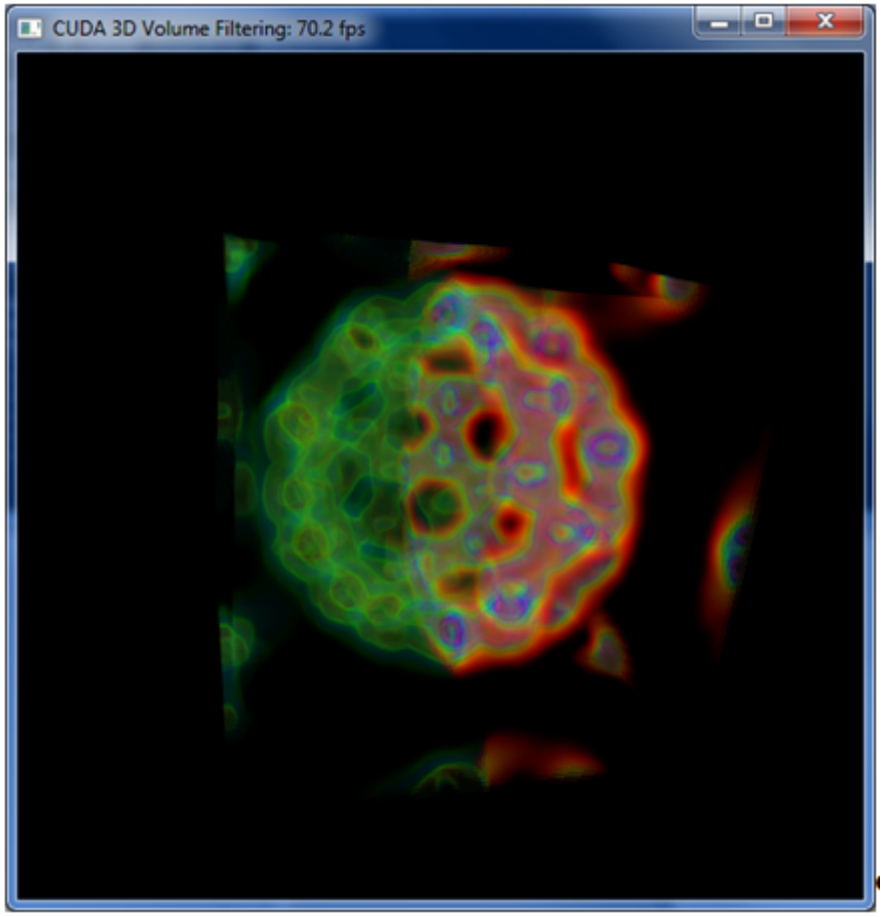
This sample implements Mersenne Twister GP11213, a pseudorandom number generator using the `CURAND` library.

`HSOpticalFlow`

When working with image sequences or video it's often useful to have information about objects movement. Optical flow describes apparent motion of objects in image sequence. This sample is a Horn-Schunck method for optical flow written using CUDA.

`volumeFiltering`

This sample demonstrates basic volume rendering and filtering using 3D textures.



simpleCubeMapTexture

This sample demonstrating how to use `texcubemap` fetch instruction in a CUDA C program.

simpleAssert

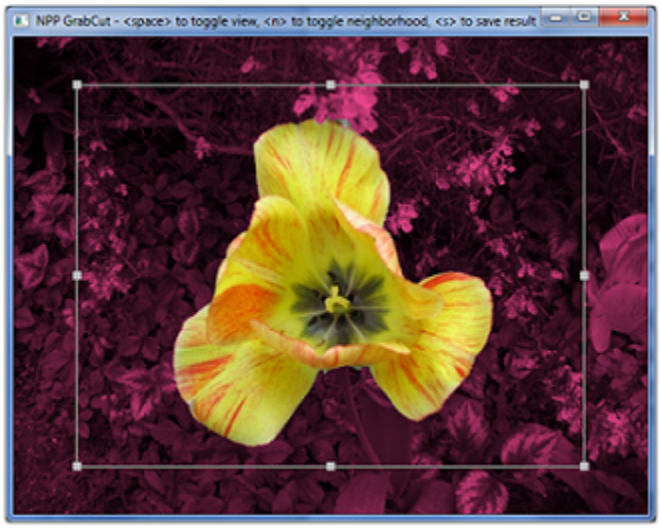
This sample demonstres how to use GPU assert in a CUDA C program.

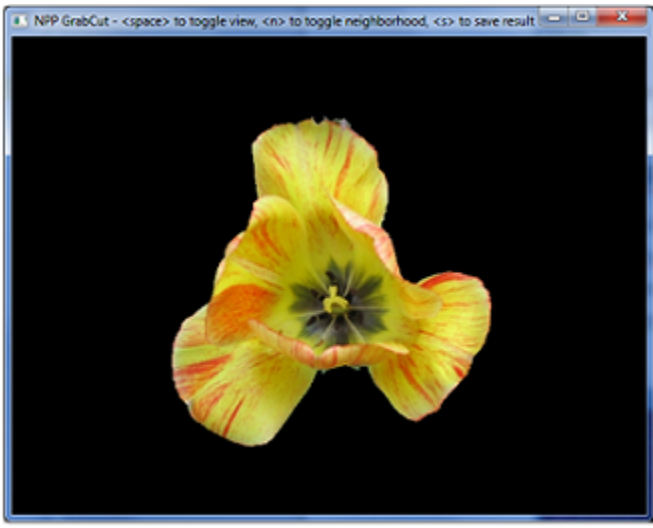
NPP

For additional information about `NPP`, please refer to the document *NPP_Library.pdf* included with the CUDA toolkit.

grabcutNPP

CUDA implementation of Rother et al. GrabCut approach using the 8 neighborhood `NPP` Graphcut primitive introduced in CUDA 4.1. (C. Rother, V. Kolmogorov, A. Blake. *GrabCut: Interactive Foreground Extraction Using Iterated Graph Cuts. ACM Transactions on Graphics (SIGGRAPH'04)*, 2004).


NPP GrabCut - <space> to toggle view, <n> to toggle neighborhood, <s> to save result


NPP GrabCut - <space> to toggle view, <n> to toggle neighborhood, <s> to save result