darktable - Bug #12400

Opencl code of non local means does not produce the same result as sse and "normal" code

11/11/2018 05:21 PM - rawfiner -

Status:	Fixed		**Start date:**	11/11/2018
Priority:	Low		**Due date:**	
Assignee:	rawfiner -		**% Done:**	100%
Category:	OpenCL		**Estimated time:**	0.00 hour
Target version:	2.6.0			
Affected Version:	git master branch		**bitness:**	64-bit
System:	unknown		**hardware architecture:**	amd64/x86

Description

When processing an image with either denoise (non local means) or denoise (profiled) in non local means mode, the processed image is different if opencl is used.
There are differences in the result obtained in a lot of pixels of the image.
The differences are small for pixels in the center of the image, and the differences on the top, bottom, and sides can be much more visible.

In the attached images, I used a patch size of 0, patch radius of 20 (the effect is more visible when patch radius is big, but is here whatever the value of patch radius), and force of 4, on the image "degrade.jpg".
The image degrade_difference_.jpg shows the enhanced difference of the images from sse and opencl code.

Associated revisions

Revision 3a26980e - 01/13/2019 07:08 PM - rawfiner -

Bugfix for opencl of nlmeans (denoiseprofile)

Fixes #12400

History

#1 - 11/13/2018 08:34 PM - rawfiner -

I found a fix. I will open a pull request as soon as possible (I need to cleanup my code and to test it a bit more before that)

#2 - 11/15/2018 10:28 PM - rawfiner -

Pull request opened here: https://github.com/darktable-org/darktable/pull/1834

#3 - 11/26/2018 11:42 PM - Aurélien PIERRE

- Status changed from New to Fixed

- % Done changed from 0 to 100

#4 - 11/29/2018 02:13 PM - Roman Lebedev

- Target version set to 2.6.0

#5 - 01/05/2019 06:59 PM - rawfiner -

- File gpu.jpg added

- File cpu.jpg added

The issue is not fixed, the changes of the pull request made only the effect less easy to see...
See attached images. I have no idea of what may cause this :-/

#6 - 01/05/2019 07:16 PM - rawfiner -

By the way, the behavior is a bit different now, as borders are undersmoothed, wereas before they were oversmoothed

#7 - 01/06/2019 01:28 PM - rawfiner -

I have maybe found a fix. I will open a pull request soon, after more testing

#8 - 01/08/2019 08:36 PM - rawfiner -

- Status changed from Fixed to In Progress

- % Done changed from 100 to 50

#9 - 01/08/2019 08:39 PM - rawfiner -

- Assignee set to rawfiner -

#10 - 02/02/2019 01:43 PM - rawfiner -

- Status changed from In Progress to Fixed

- % Done changed from 50 to 100

Applied in changeset [darktable|3a26980e02d85903d59403639913470d9f9127a7](#).

Files

degrade_cpu.jpg	537 KB	11/11/2018		rawfiner -
degrade_gpu.jpg	533 KB	11/11/2018		rawfiner -
degrade_difference_.jpg	539 KB	11/11/2018		rawfiner -
degrade.jpg	275 KB	11/11/2018		rawfiner -
gpu.jpg	131 KB	01/05/2019		rawfiner -
cpu.jpg	116 KB	01/05/2019		rawfiner -