

## Notes:

- Windows XP uses a thing called “watch dog”. It will stop any GPGPU program if any operation takes more than 5 seconds. To avoid this, render using the CPU or get a second GPU... then, disable the primary GPU in the ratGPU's option dialog. Windows Vista/7 have not this problem.
- Please, install the 3dsmax 2010 SP1 or ratGPU might not detect properly the folder to copy the plug-in.
- If you want to run this program using an ATI card, please use the Catalyst 11.8 APP or above. Versions prior to the 11.8 may hang the program. Radeon 4XXX and above are supported.
- The Forceware 19X and 25X will cause a lot of problems with ratGPU. Please use the new FW 280 or above which should work ok but they have a limitation: if you use a 64-bits OS then you must use the x64 version of ratGPU ( the x86 one won't work ).
- The G80 cards ( GeForce 8 and 9 series ) have bad performance tracing rays. I recommend a GT200 or above instead.
- The CPU ray tracing devices are usually disabled by default because they're much slower than the GPU. If your CPU is not very powerful, better disable the CPU ray tracing device or it will slow down the rendering process. Notice also it's possible to render with a combination of CPU and GPU ( aka “Hybrid rendering” ) but if your image is small ( less or equal to 512x512 ) the CPU will just slow the process instead of making it faster.
- Hybrid rendering could cause some differences in the final result ( each device might use different floating point precision and optimizations ).
- If you use OpenSUSE (amd64), the ratGPU StandAloneRenderer launcher will only appear in the Applications menu only after you close the session.
- If you get a duplicate plugin GUID message from 3dsmax when the ratGPU's plug-in is loaded, please uninstall the old versions.
- The 3dsmax's material editor will show all the material previews in black.
- The Maya exporter/renderer cannot work with NURBS so you must convert them to polygons.
- Currently, there's a problem stopping the Maya's batch render. You may need to kill the mayaBatch/Renderer process manually.

History:

#### **v0.5.5 Beta**

- Added command line options to execute the tests one by one ( pass -? to the app's params to see the options! ).
- Changed the way to detect OpenCL's DLLs to avoid compatibility problems.
- Now you can specify the light's intensity scale.
- Solved a potential problem that could lead to firefly artifacts in the CPU renderer.
- Added a close button to the about dialog and to the benchmark result dialog.
- Recompiled using more aggressive optimization flags.
- Added a log window to the stand-alone renderer.
- Fixed a compilation error using the Intel's OpenCL runtime.

#### **v0.5.4b Beta**

- Recompiled using the latest libraries.
- Fixed some minor bugs with Ubuntu 11.10 Oneiric Ocelot.

#### **v0.5.4 Beta**

- Solved a problem that was causing a “pure virtual function call” error.
- Fixed a CPU-GPU result mismatch.
- Recompiled using the latest libraries ( AMD APP SDK 2.5 ).
- Fixed a poteltial buffer overrun in VRAM memory that could generate artifacts.
- Optimized a bit the rendering speed of non-textures surfaces.
- The benchmark document now contains standalone renderer's results instead of 3dsmax's ones.
- Added Mandriva 2011 and Linux Mint 11 support.

#### **v0.5.3 Beta**

- Added an option to limit the AO distance.

- Added support for Maya's batch rendering.
- The CPU C++ renderer now is a 20-33% faster.
- Recompiled the program with the new compilers ( VS2010, llvm 2.0/xc4 ) and libraries.
- Added some Maya's missing examples to the Mac version.
- Fixed some problems with Catalyst 11.6.
- Moved some files outside the Mac's app bundle.

### **v0.5.2b Beta**

- Fixed a problem installing ratGPU in Fedora ( some dependencies were missing ).
- Fixed a problem registering the renderer for Maya 2012 ( missing ratGPU.mel file ).

### **v0.5.2 Beta**

- Optimized the rendering speed a 33% for ATI cards ( BUT you'll need Catalyst 11.5 or the program may hang! ).
- Optimized the ambient occlusion generation a 8%.
- Radeon 4XXX cards are now supported.
- Added support for Maya 2012 ( Windows and Mac ).
- The ray tracing structures now are computed slightly faster.
- Fixed several installation problems with linux.
- Removed the expiration time and the need for an Internet connection.

### **v0.5.1 Beta**

- Made the standalone's renderer devices's tab dockable.
- Fixed a bug that was causing to display the CL device's clock equal to the available memory size.
- Solved several problems with Catalyst 11.3.
- Fixed a bug in the installer that was causing some DLLs for 3dsmax 2011 not to be copied to the correct place.
- Added 3dsmax 2012 support.

#### **v0.5.0 Beta**

- Added texture support.
- Added anti-aliasing for the ambient occlusion and path-tracing.
- Added glossy reflection support.
- The 3dsmax's ratGPUMtl material's parameters now can be animated.
- The renderer now shows the tiles which are being processed.
- Changed the device combo box by a device tree list which is more intuitive.
- Solved several shading problems with ATI cards.
- Extended the Beta period to September 1, 2011.

#### **v0.4.9 Beta**

- The program is now stable and we will just fix bugs and add new functionality, so we changed the “alpha” tag by “beta”.
- Fixed a problem rendering the normals.
- The render tiles now are a bit smaller to avoid the last tile to lock the rest using SLI/Crossfire.

#### **v0.4.8 Alpha**

- Fixed more hangs with ATI cards.
- Solved a problem in linux with the libOpenCL.so.1 dependency.
- The Macintosh deployment now embeds all the files inside the .app

#### **v0.4.7 Alpha**

- Fixed the hang with ATI cards.

#### **v0.4.6 Alpha**

- Extended the alpha to June 1, 2011.
- Patched a problems with ATI cards that was causing some system hangs. Unfortunately, it

has been “patched” and not really fixed. The patch will avoid a system hang but at the cost of some rendering speed.

- Removed the version from the 3dsmax's plug-in filename because it was causing some duplicate GUID messages. Newer versions will just overwrite the file.
- Fixed a color mismatch between 3dsmax and the standalone renderer.
- Now the plug-in for 3dsmax uses the 3dsmax's gamma settings. The gamma slider have been removed from the ratGPU's config dialog.
- Recompiled using the latest libraries.

#### **v0.4.5e Alpha**

- Solved several problems with timers.

#### **v0.4.5 Alpha**

- Added MacOSX 10.6 support.
- Optimized the rendering speed a 2% ( work size coherency disposition + output flags + dev2dev event wait ).
- Now the linux's standalone renderer will be installed in /opt/ratGPU-versionXXX-arch, so you can use multiple versions without being overwritten.
- Fixed some potential problems due to assert failures under linux.
- Solved a problem unloading the OpenCL's compiler which was causing some random crashes.
- Now the CPU OpenCL devices are listed too ( but the ratGPU C++ one is usually faster ).
- Fixed a bug in the 3dsmax's renderer that was causing the process to stay in the task manager indefinitely .
- The 3dsmax's plugins are not installed in the “plugins” folder instead of in the “stdplugins” folder, which is more conceptually-speaking correct. Also, added the version to the file names to avoid problems with different versions.
- The 3dsmax's renderer no longer stores the list of devices to ignore in the .max files ( because the list may vary from an user to other user ).
- Fixed a discrepancy between the CPU renderer and the GPU renderer ( different bright and tile alignment ).
- In order to skip incompatibilities with MacOSX ( gcc 4.2.1 ) we had to drop OpenMP in favour of TBB.

- Recompiled using the latest libraries.

#### **v0.4.4 Alpha**

- Optimized the rendering speed a 400%.
- Solved some problems with the Windows XP's watchdog.
- Added a slider to control the optimization of the spatial structure.
- Reduced a bit the quality settings of the benchmark to be completed in less time.
- Increased the render size of the last test in the benchmark to scale better with SLI/Crossfire configurations.
- Changed the background image of the Windows installer by one with more resolution.
- Added OpenSUSE 11.3 support.

#### **v0.4.3 Alpha**

- Added a device list to the benchmark result's dialog and appended the number of compute units, core clock and memory quantity to the device string.
- Now the standalone renderer is able to save the rendered images to files.
- Fixed a bug that was causing the scroll bars not to be properly shown in the standalone renderer.
- The benchmark's LCD control now uses more digits ( 10 in total ).
- Fixed a bug that was causing the standalone's bitmap control not to display the last line of the image.
- Added the spanish translation for the standalone renderer app.
- Solved a bug that was adding a strange character to the camera button's label in the standalone renderer.
- Added support for Ubuntu linux 10.04 (Lucid Lynx) and 10.10 ( Maverick Meerkat ).
- Solved minor errors ( exit while rendering, about dlg clipping, etc... ).

#### **v0.4.2 Alpha**

- Added an stand-alone renderer and a small benchmark.

#### **v0.4.1 Alpha**

- Solved a problem that could cause 3dsmax to close suddenly when the plug-in's loading mechanism fails.
- Improved the speed with ATI cards a 30%.
- Made some internal changes to allow the execution of more complex shaders in the future.

#### **v0.4.0 Alpha**

- Doubled the speed with ATI cards.
- Added an OpenCL device selector to the ratGPU's options.
- Added Windows XP support ( see notes, please ).
- Fixed a bug notifying the latest's tile progress.
- Enabled hybrid ray tracing: now you can use both CPU and GPU to render.
- Fixed a bug that was causing the renderer to output low-precision normals.

#### **v0.3.1b Alpha**

- Added an ODF document with some benchmarks.

#### **v0.3.1 Alpha**

- Fixed a bug that was causing to show a funny “1h 72m 45s” time format.
- Solved a problem rendering the background with path-tracing.
- Added the CrystalFigures example.
- Fixed a bug that was causing to clip the primary rays using the scene radius instead of the camera's range which is the right way.
- Changed the installer's background bitmap by a render of the CrystalFigures scene.

#### **v0.3.0 Alpha**

- Solved a problem computing the normals of the meshes.
- Increased the rendering speed ( between 15% and 100% ).

- Prepared the libraries internally to port the program to Maya.
- Added two new kind of maps to render : Depth and BSP Depth.
- Added ATI support.
- Added the SimpleAOScene example.

### **v0.2.1 Alpha**

- Added a new example for 3dsmax 2010/2011: Cornell box.

### **v0.2.0 Alpha**

- Improved slightly the quality of the AO using a better probabilistic model.
- Added per-vertex normals support.
- Added preliminary support for path-tracing.
- Fixed a problem trying to load ratGPU without having OpenCL installed.
- Our lovely pet's logo now show correctly a transparent background in 3dsmax.
- Added a button to reset the defaults in the 3dsmax's renderer tab and also in the ratGPUMtl.
- Removed the renderer tabs not used in 3dsmax.
- Made the serialization(load/save) more resistant to versioning.
- Fixed a bug that was causing to compute bad the FoV for the cameras, viewports and lights.
- Added a new example for 3dsmax 2010/2011: balls inside box.
- The “cancel” process now aborts faster ( you don't have to wait the complete tile anymore ).
- Now you can see the elapsed time and tile's completion percentage in the progress bar.

### **v0.1.2 Alpha**

- Optimized the render speed a 20-25%.

### **v0.1.1 Alpha**

- Solved a crash that was happening if you were rendering a time frame.



- Added a bitmap to the installer's background.

### **v0.1.0 Alpha**

- Solved a crash rendering with multiple GPUs.
- Now the ratGPU's render settings will be saved into your scene.
- Optimized a lot the program.
- Changed the sampling of the ambient occlusion to avoid banding artifacts.
- Now the rendering is performed using tiles.
- Added some options to the ambient occlusion ( number of rays per pixel, spread angle, bias, etc... )

### **v0.0.0 Alpha**

- Created ratGPU