

Posudek diplomové práce

Matematicko-fyzikální fakulta Univerzity Karlovy

Autor práce Alisher Kenzhebayev
Název práce Vectorized traversal of sparse volumes for GPU path tracing
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Studijní program Informatika **Studijní obor** Počítačová grafika a vývoj počítačových her

Autor posudku Darryl Gouder **Role** PhD Student
Pracoviště CGG

Text posudku:

The thesis describes the integration of *NanoVDB* into the *mitsuba 3* differentiable renderer. This effort in itself is an engineering challenge as *mitsuba 3* is a complex, sophisticated piece of software using a programming paradigm that would be jarring for those new to it. Additionally, *NanoVDB* is an industry-standard library, which comes with its own complexities.

The student has exhibited sufficient evidence of a successful integration. It is clear the student had a lot of work on his hands, and this required a lot of coding and prodding of the *NanoVDB* API to get all the nuts and bolts working.

Additionally, the evaluation is thorough, and the student has categorized and analyzed all the results satisfactorily.

My 2 main qualms are the following:

- The language in the text is inundated with an excessive amount of filler words, peculiar sentence structure, and unnecessary information.
- Furthermore, there should have been more diagrams to explain the structure of the classes and code. It read like the standard documentation without the benefit of having the code printed. I will cut the student some slack here because I believe that this is unavoidable in the context of such a thesis. For the majority, this was an engineering experiment between two existing pieces of software. But maybe this is an opportunity for us to determine what the manuscript content of this kind of project should consist of. Given the language style and documentation-like content, it was not an easy read.

Regardless of these 2 points, I still believe the student's thesis has qualified for a pass.

Práci doporučuji k obhajobě.

Práci nenavrhuji na zvláštní ocenění.

V Praze dne 01. 09. 2024

Podpis: D. Gouder