Posudek ~~vedoucího~~/*oponenta** diplomové práce

Jméno a příjmení autora posudku: Alexander Wilkie

Jméno a příjmení autora práce: Petr Vévoda

Název práce: Robust light transport simulation in participating media

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Vlastní text (přiložen na další straně/stranách).

(see attached second page)

Doporučení k obhajobě:

Z výše uvedených důvodů práci   *doporučuji* / ~~nedoporučuji~~ k obhajobě.

Vynikající práce vhodná pro soutěž studentských prací	ANO ☒

Seznam soutěží studentských prací, viz http://www.mff.cuni.cz/studium/bcmgr/prace/

Pokud jste výše zaškrtli ANO, zdůvodněte prosím svůj návrh, případně uveďte konkrétní soutěž, pro kterou
je práce vhodná (rámeček lze nechat prázdný, pokud za dostatečné zdůvodnění považujete text posudku):

The thesis presents the first reference implementation of a significant advance in light transport
simulation. While the student did not derive the technique all by himself, his implementation was
used to generate results for the high-profile publication in which this new technique was presented.
As the student did not only act as the main coder for this project, but also contributed to the science
content of what is a significant advance in light transport theory, the thesis definitely qualifies to be
considered for the contest.

V Praze dne: 16.1. 2015

Podpis:**

* nehodící se škrtněte (vymažte)
** do SISu vkládejte formulář nepodepsaný (ve formátu PDF), podpis je potřeba doplnit až na vytištěný posudek.

Assessment of the Master's thesis titled

"Robust light transport simulation in participating media"

submitted by Petr Vévoda, and supervised by Jaroslav Křivánek

In his thesis, the candidate presents his part of research work that was done as part of a larger research effort which culminated in a landmark publication at SIGGRAPH in the area of light transport techniques last year, for which the thesis supervisor was the first author. The candidate provided the reference implementation of the new technique, which was used to generate the results that were demonstrated in that publication. This reference implementation is the core of this thesis, and all its relevant technical aspects are discussed in ample detail. In particular, it was very positive to see a thesis that contains significant amounts of source code from the submitted sample implementation - *along with detailed and relevant descriptions of what it does, and how this ties in with the theory behind the new technique that was proposed in the 2014 publication.* The emphasis on the second part of the sentence is due to the fact that unfortunately, not a lot of theses present the critical parts of their source code as well as this one does: in addition to being very instructive, the quality of the explanations leaves no doubt about the author being the main person responsible for its design.

In addition to this, in the first sections of the thesis, the candidate also does a very good job of presenting the theory behind what was proposed in the SIGGRAPH publication. In particular, the thesis significantly goes beyond the publication in explaining what the contribution and novelty of the introduced technique exactly was. The quality of the overall writing and explanations is such that the thesis can be directly recommended as background reading to anyone wishing to implement a modern renderer that contains volume sampling code.

Overall, the presented work is a solid result, and was instrumental in obtaining a very important publication. Therefore, the thesis is recommended for acceptance.