Bachelor Thesis Review

Faculty of Mathematics and Physics, Charles University

Thesis author	Jan Koblížek
Thesis title	Procedurally Generated Volumetric Cloudscapes for Unity
Year submitted	2020
Study program	Computer Science
Study branch	General Computer Science
Review author	Martin Kahoun Advisor
Department	Department of Software and Computer Science Education

Overall

	good	OK	poor	insufficient
Assignment difficulty	X			
Assignment fulfilled	X			
Total size *... text and code, overall workload*		X		

The author picked a contemporary topic and implemented it within the context of popular game engine used by many independent game developers. The topic is reasonably difficult and the author showed good grasp of the theory as well as practical implementation. In spite of some issues pointed out below, I do think this is a good work and propose the Excellent grade.

Thesis Text

	good	OK	poor	insufficient
Form *... language, typography, references*		X		
Structure *... context, goals, analysis, design, evaluation, level of detail*	X			
Problem analysis	X			
Developer documentation			X	
User Documentation		X		

The thesis is well structured and readable with only minor English mistakes, typos, or missed figure references. The problem analysis in the first chapter is quite detailed for a bachelor thesis, the implementation chapter is also well written, however, the third chapter describing the optimizations that were needed in order for the algorithm to run in real-time is somewhat lacking details.

Although, the text is supplemented with lots of explanatory pictures, some of them could use better description or could have been done better, e.g., Figure 2.11 showing shadows cast by clouds. Sometimes, I missed pictures altogether, but overall the text is understandble and it is clear what the author meant.

The thesis is supplemented with short tutorial how to get the implementation up and running within Unity game engine. However, information provided are quite scarce for anyone without any prior experience with Unity. I'd expect at least stating the recommended version of the engine. I'm missing completely the well written user and developer documentation that was handed over as part of the Individual Software Project.

Thesis Code

	good	OK	poor	insufficient
Design *... architecture, algorithms, data structures, used technologies*	X			
Implementation *... naming conventions, formatting, comments, testing*	X			
Stability	X			

The code is well written and reasonably commented. Most of the implementation resides in the shaders with only little code written in C# driving the whole rendering. The implementation was stable, although, I ran into problems with the Unity itself which for some reason did not import the terrain scene.

Overall grade Excellent
Award level thesis No

Date: 30/08/2020 Signature