

Bachelor Thesis Review

Faculty of Mathematics and Physics, Charles University in Prague

Thesis author	Štěpán Hojdar	
Thesis title	Procedural placement of 3D objects	
Year submitted	2017	
Study program	Computer Science	
Study branch	General Computer Science	
Review author	Mgr. Martin Kahoun	Reviewer
Department	Department of Software and Computer Science Education	

Overall good OK poor insufficient

Assignment difficulty		X		
Assignment fulfilled	X			
Total size <i>... text and code, overall workload</i>	X			

I appreciate the fact that this work was created in collaboration with people who have practical experience developing commercial grade software. This enabled the author to make good design decisions based on the actual user base feedback and consultations with expert users of the software. In my opinion the author did a very good job in creating a procedural generation tool that is very easy to use.

Thesis Text good OK poor insufficient

Form <i>... language, typography, references</i>	X			
Structure <i>... context, goals, analysis, design, evaluation, level of detail</i>	X			
Problem analysis		X		
Developer documentation	X			
User documentation	X			

The thesis is written in good English, well typed with lots of figures showing the various aspects of the matter at hand. While I like the very well presented problem introduction and extensive survey of already existing solutions, I'm missing more of the theoretical background in the problem analysis itself. On the other hand, I have to commend the author for providing in-depth reasoning about all of the design decisions taken for all the presented problems.

However, I missed several things in the implementation chapter, namely: explaining how are the generated instances oriented on the surface during the regular pattern scattering, explaining the method for calculating instance modification coefficients from instance-to-spline distance, and more details on how is the consistency maintained during the parallel instance generation. But overall, the thesis quickly presented answers to any questions that arose during the reading, and the reader is left with a very good overview of the software.

The thesis then describes the inner workings of the project, how is the code base structured and what objects serve what purpose, again with good reasoning behind all the decisions taken. The user documentation is well written, and eventhough, I was not able to try out the plugin for Autodesk 3DS Max, thanks to the documentation I got a very good picture of what to expect from it. The presented results and performance measurements are well detailed.

Thesis Code

good OK poor insufficient

Design	<i>... architecture, algorithms, data structures, used technologies</i>	X			
Implementation	<i>... naming conventions, formatting, comments, testing</i>	X			
Stability		X			

The software expands on an existing solution which was rather trivial before the author implemented the functionality described in this thesis. The source code is well written and commented and was a pleasure to read through. The author also implemented unit tests where applicable and regression tests using rendered images that check the validity of the test scenes. Because it is a part of larger closed source software package the standalone plugin for Autodesk 3DS Max is provided along with a standalone OpenGL application showcasing the implemented features. I was able to try out all the presented concepts, the software ran smoothly and I haven't experienced any stability issues.

Overall grade Výborně
Award level thesis Ne

Date June 11, 2017

Signature