Title	
Author(s)	,
Citation	
Issue Date	2008-03
Type	Thesis or Dissertation
Text version	author
URL	http://hdl.handle.net/10119/4279
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Description	Supervisor: , ,

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Generation of Tree Distribution

With Multi Layer Structure

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March 2008

There are many movies and video games that are created by computer graphics. The works express various natural objects. However, because of complications of natural objects, workload of creation increases with improvement of quality. Producers need increasing efficiency of creation of computer graphics.

This paper describes method that enables producers to create forests with multi layer structure in computer graphics. Generating tree distribution automatically improves the efficiency of the creation process. Generating tree distribution with multi layer structure has not been realized in previous research. A virtual forest does not have to be the same as a real forest. Therefore producers need techniques to reflect their intentions regarding the virtual forest.

In this paper, to generate tree distribution, a forest is simulated in the computer. There are two factors to obtain a tree distribution with multi layer structure. Upper layer trees have priority over lower layer trees in acquisition of light resources. And maximum height of a tree is different between species. Part of their simulation is implemented on GPU.

As a result of this research, it is possible to generate tree distribution with multi layer structure. And a producer can edit forests easily by editing image data. Simulation speed is so fast that a producer can edit virtual forests interactively.