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Assignment on Virtual Reality and Physically-Based Simulation - Sheet 5

Due Date 20.1.2016

Figure 1: Realistic rendering showcase from the unreal learning section

Exercise 1 (Interaction Metaphors, *10+30 Credits*)

In this exercise, the goal is to create a new interaction metaphor or implement one from the lecture. The metaphor should either solve a selection task or a modification task.

a) In the first part of this exercise, you should define your metaphor theoretically. Therefore, you should draw an almost complete taxonomy (or decomposition) of it.

b) In the second part of this exercise, you should implement your interaction metaphor using Unreal 4.

You will present your metaphor, taxonomy and your implementation to your fellow students and me, on January, 20, in the tutorium.

As main input devices for your metaphor, mouse and keyboard are forbidden. You must use at least one of the following devices, which are available in the lab:

- Oculus Rift: `https://wiki.unrealengine.com/Oculus_Rift`
- Leap Motion: `https://forums.unrealengine.com/showthread.php?49107-Plugin-Leap-Motion-Event-Driven` If you use your own pc, make sure to install the Leap SDK: `https://developer.leapmotion.com/downloads`
- Kinect 2: `http://www.opaque.media/download-k4u` As the sample from the marketplace currently is missing the .uproject file, you can download a working version here: `http://k4u.opaquemultimedia.com/`

`K4U_4.9.1_1.1_Introduction_Marketplace.zip` For your own PC: Windows 8 or newer is required and don't forget to install the SDK: `http://www.microsoft.com/en-us/download/details.aspx?id=44561`

For your implementation you can use the realistic rendering showcase (fig. 1) from the learning section in the unreal launcher, as shown in the tutorium. The PC in the lab, where you tested the Titans of Space demo, will be available starting January, 4. If you would like to use other input devices or implement a different interaction task, please feel free to write a very short proposal by mail (5 lines max should suffice).