

Winter Semester 2014/15

## Assignment on Virtual Reality and Physically-Based Simulation - Sheet 1

Due Date 04. 11. 2014

### Exercise 1 (Virtual Reality, 4 Credits)

- Try to define the following in your own words: "Virtual Reality", "Virtual Environment", "Immersion", "Presence", "Fidelity" and "Suspension of Disbelief"
- Imagine the following scenario: You are standing on a glass floor, from beneath that glass floor a virtual skyscraper is being projected, so that you can see your own body standing on the virtual building. Is that AR or VR? Provide some arguments for your position.
- Give some possible applications of VR. Can you find some examples where VR is not being applied, but could be?

### Exercise 2 (Presence, 4 Credits)

- Form groups of four people and **either** try out the demo "Titan of Space" **and** "Lava" on Oculus Rift 2 device **or** watch a movie in the cinema theatre and answer the following questions in table 1. Each question corresponds to a factor thought to be correlated with presence, such as, for example: 'How much were you able to control events?' and from scale of 1 to 7.
- Plot box-and-whisker plots (using simple medians) for the data obtained from your group for each of the above questions and for the total score obtained.

*Hint:* You can create box-and-whisker plots, for instance, with Excel (see <http://support.microsoft.com/kb/155130>) or with Gnuplot (Examples for plotting box-and-whisker plots in Gnuplot can be found here <http://gnuplot.sourceforge.net/demo/candlesticks.html>)

Questions	"Titan of Space" Demo	"Lava" Demo	Movie
To what extent were there times during the experience when the $x$ was a reality for you? 1 = At no time & 7 = Almost all the time.			
Please rate your sense of being in the virtual spacecraft, on the following scale from 1 to 7, where 7 represents your normal experience of being in a place.			
When you think back about your experience, do you think of the $x$ as more as images that you saw, or more as somewhere that you visited? 1 = Images that I saw & 7 = Somewhere that I visited.			
During the time of the experience, did you often think to yourself that you were actually in the $x$ ? 1 = Not very often & 7 = Very much so.			

Table 1: Questions Table.  $x$  is either "Titan of Space" Demo or "Lava" Demo or Movie