Multimedia Interfaces VO (188.640 SS22) – Written Exam

21st June 2022

Time: 2 hours

A global world-wide adventure tour operator would like to propose immersive and virtual travel experiences to their customers. Their objective is to create new experiences that will be as similar as possible to the real ones they are proposing. To reach a new audience, the tour operator wants to design different versions of the experiences from very immersive to less immersive. For the first phase of this project, they want to focus on four main use cases: scubadiving in oceans, rope climbing on mountains, fishing in lakes and horse hiking in the valleys.

The company asked you to design **two** of the four use cases. For each use case, you will have to propose **two versions**, one with high immersion (with unlimited budget) and another with lower immersion (trying to optimize the tradeoff between the costs and the immersion).

The company suggests you to start the design with the more complex version and then downgrade several of their components for the more "basic" version, but justifying their potential impact on the user's experience.

For each use case, you have to provide as many details as possible (e.g. hardware, control algorithms, interactions, feedback) and the impact of your choices in the user's experience (e.g. immersion, presence, simulator sickness, embodiment, usability…).

While describing your platforms, structure the discussion based on the action-perception loop presented during the course:

• What are the actions that the user has to perform?

• How these actions are translated into commands?

• What feedback provided by the system and how the user perceives it?

Describe the different components of the interfaces with text and drawings in order to increase clarity. You can assume that technical aspects rendering of the 3D scenes and the physical simulation are solved, and that you have unlimited access to any multimedia hardware (think big !).

Finish the discussion for each solution by the viability of the system, and any potential unsolved issues that may remain.