Master Thesis:
Possibilities and Limitations of hand-based Spatial Input in Virtual Reality

ACCESS@KIT - Zentrum für digitale Barrierefreiheit und Assistive Technologien

Spatial input has been gaining more and more interest, especially since the introduction of the Apple Vision Pro, which is designed for interaction without a controller. For VR and AR applications, the hands, among other things, are becoming important input options. There are a variety of different options here, from pure hand tracking and the use of wristbands for gesture control to the use of gestures on e.g. a trackpad. However, the suitability of spatial input for people with visual impairments is an open question.

Objective of the Master Thesis:

The aim of this master's thesis is to compare selected hand-based spatial input methods in VR with regard to their suitability for people with and without visual impairments. Factors such as the precision and speed of the input, as well as possible limitations when used in a work context, should be considered. In a user study with people with and without visual impairment, the use of these methods in VR should be examined and preferences in the choice of input method analyzed.

Topics and Key Aspects:

- Familiarization with the development of VR applications for people with visual impairments
- Test and selection of hand-based spatial input methods in VR
- User study on the suitability of the selected methods in a work context
- Creation of detailed documentation of all steps and results of the work

Requirements:

- Students enrolled in a Master's degree program in computer science, information science or a related course.
- Interest in the topics of VR and accessibility.
- Programming skills, preferably C#.
- Ability to work independently and problem solving skills.

If you are interested or have any questions,
please contact Julia Anken (julia.anken@kit.edu).

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