Development of a gesture driven UI for a museum exhibit

Description
The Deutsches Museum is currently refurbishing its main site and in that course all exhibition are undergoing a redesign. For the exhibition of music instruments, in the section for electronic music, there will be a media station, where the visitor can build his own music track out of a choice of given music samples. To emphasise the immateriality of the digital samples, detached from the original instruments, the user is to interact with a non haptic interface. Due to limited resources for maintenance and supervision and space in the exhibition, a VR-Experience with HMDs is not considered as an option. The interaction should be in front of a monitor, showing the virtual environment with a representation of the users hands in it.

The aim of this project is to find ways for an intuitive and robust interaction with the 3D-Szene, researching suitable Hardware for vision based hand tracking (LeapMotion, Kinect) and to create a UI that is most appropriate for the given task of letting the user experiment with sound. Different UI-scenarios can be developed for evaluation purpose. The student will work in close exchange with the curator team for the musical instruments, who are happy to assist in subject specific issues.

The result will be a technical proof of concept, which will be the base for further design stages.

Tasks
- Research of similar applications
- Research suitable hardware and Interaction model
- Create test scenarios in an iterative process
- Evaluate outcome

Requirements
- Good Experience with Unity or similar development environment
- Interest in 3D-Tracking and User-Interface-Design
- Creative problem solving
- Interest in working in a museum environment
- Background in music is of advantage but not required