

Embodied Interactions for Novel Immersive Presentational Experiences

Fabrice Matulic, Lars Engeln, Christoph Träger, Raimund Dachzelt



Introduction

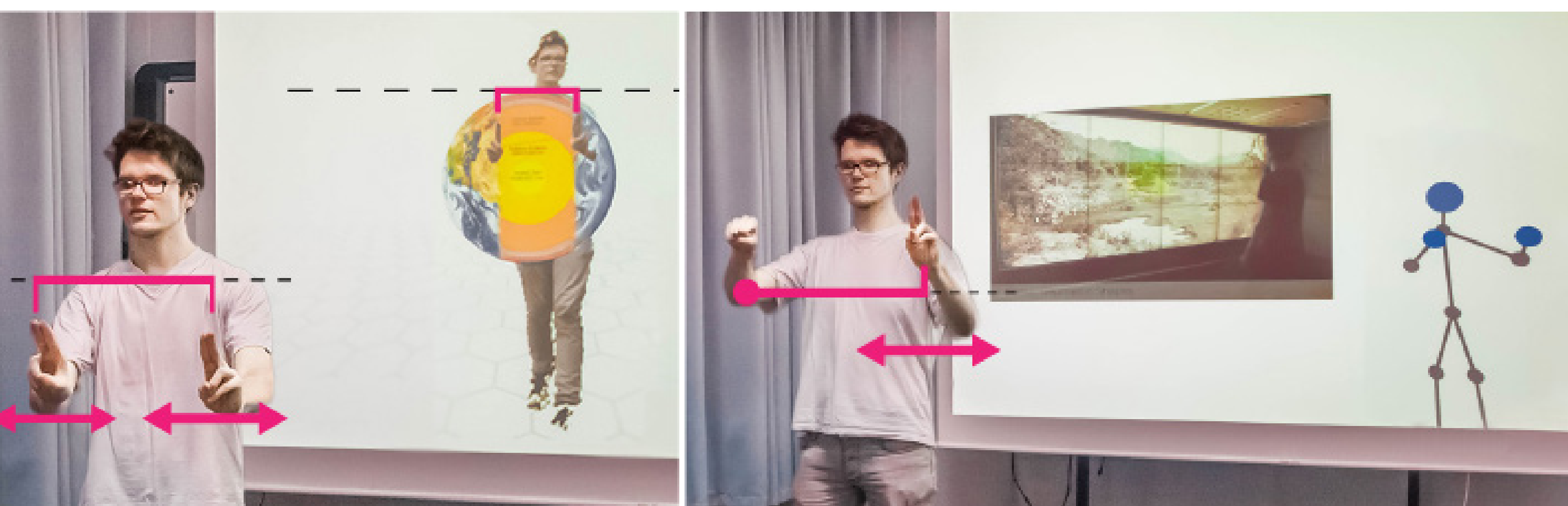
In this work, we introduce and propose a preliminary realisation of a concept to enhance live multimedia presentations, where presenters are directly integrated in their presentation content as interactive avatars. Using multimodal input, especially body gestures, presenters control those embedded avatars through which they can interact with the virtual presentation environment in a fine-grained fashion, i.e. they are able to manipulate individual presentation elements and data as virtual props. The goal of our endeavour is to create novel immersive presentational experiences for live stage performances (talks, lectures etc.) as well as for remote conferencing in more confined areas such as offices and meeting rooms.

Presenter Representation



▲ **3D depth-video:** The presenter is integrated as video avatar in the presentation 3D space. This allows, among other things, depth-based pixel thresholding to create appearance effects.

Interaction with Presentation Elements



▲ **Bimanual:** Using a symmetric bimanual expand gesture with lasso hand poses, a user “opens” a section of an earth model in order to reveal its stratigraphic layers. The exposed section corresponds to the space between the two hands. Otherwise an asymmetric bimanual gesture is used to control the playback position of a video.

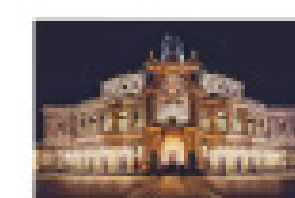


▲ Through the avatar, the presenter can slice through a stack of images, where the position of the body or a stretched arm selects the picture to be shown to the audience. The presenter view displayed on the presenter’s personal computer shows a different perspective of the scene so that he can see the images available for selection in the stack.



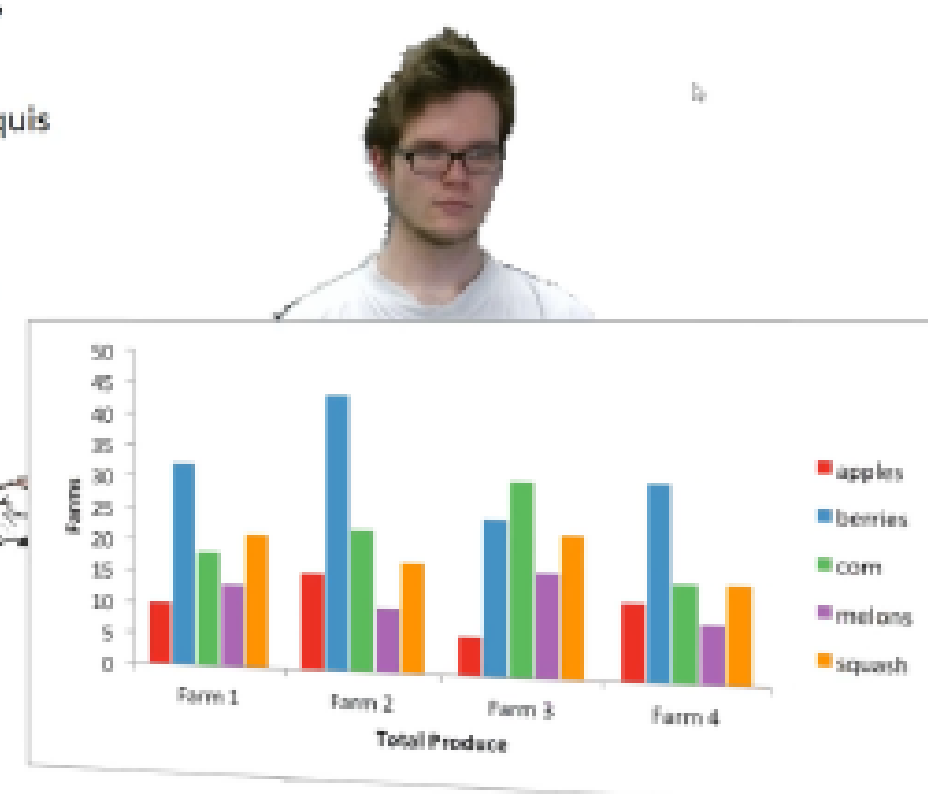
Embodied Interactions for Immersive Presentations

- Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- Ut enim ad minim veniam, quis nostrud exercitation.
- Duis aute irure dolor in reprehenderit in voluptate.



Embodied Interactions for Immersive Presentations

- Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- Ut enim ad minim veniam, quis nostrud exercitation.
- Duis aute irure dolor in reprehenderit in voluptate.



▲ **Metaphorical Gesture:** The presenter can manipulate presentation elements such as images and charts with hand gestures. The user grabs a virtual chart with his two hands and rotates/scales it to present it to the viewers. The chart can also be summoned using an associated trigger gesture at predefined time intervals or locations in the virtual space. Once he is finished with the chart, the presenter can make it disappear by clapping his hands.



Embodied Interactions for Immersive Presentations

- Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- Ut enim ad minim veniam, quis nostrud exercitation.
- Duis aute irure dolor in reprehenderit in voluptate.

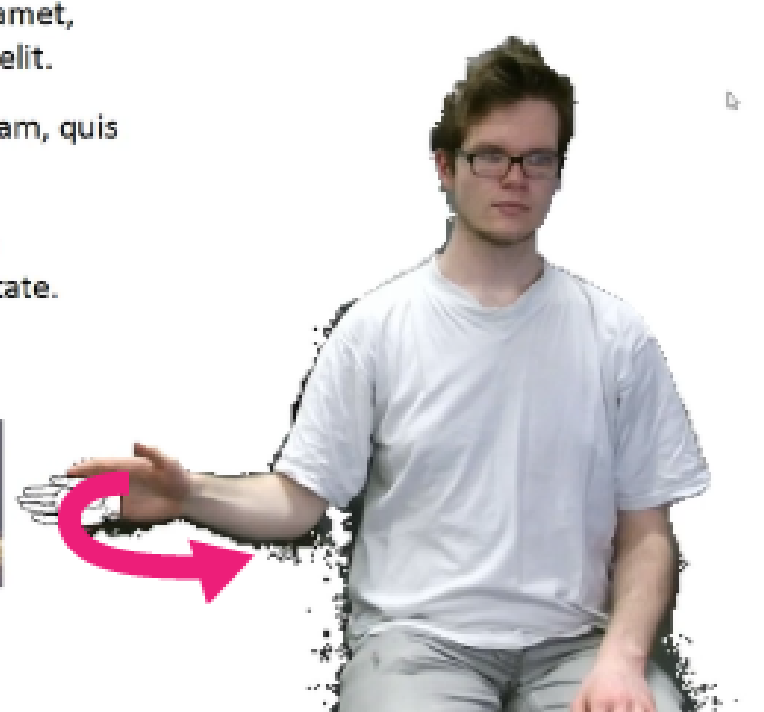


▲ **Deictic:** Presenters can point at particular items and cause them to pop out or become highlighted to indicate the current topic.



Embodied Interactions for Immersive Presentations

- Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- Ut enim ad minim veniam, quis nostrud exercitation.
- Duis aute irure dolor in reprehenderit in voluptate.



▲ Repeated hand-closing gestures above an image stack can be used to flip through the different pictures.

www.imld.de