



Virtual Reality (VR) stands as a revolutionary technology with transformative potential across diverse fields. Its immersive experiences transport users into entirely digital environments, offering unmatched opportunities for exploration and interaction. From immersive gaming experiences that transport players into fantastical worlds to virtual tours allowing individuals to explore distant locations from the comfort of their homes, VR has already made significant strides in entertainment and tourism sectors. Additionally, VR is being utilized in training simulations for industries such as aviation and healthcare, providing safe and realistic environments for skill development.

By exploring VR research, students can uncover its interdisciplinary nature, drawing upon fields like computer graphics, human-computer interaction, and design. Together, we will investigate cutting-edge VR applications in healthcare, education, and beyond, as well as the hardware used for VR (see Fig. 1 for an example).



Fig. 1: Using VR and haptic feedback to explore virtual molecules, © Gebhardt et al., 2022

This seminar provides a platform to investigate the theoretical and practical foundations of VR. Students will explore topics such as:

- *User Experience Design in VR*: Enhancing the usability and immersion of VR.
- *Display technologies for VR*: From head-mounted displays to VR caves.
- *Remote Collaboration in VR*: Collaborative VR platforms for remote work.
- *Immersive Analytics*: Interactive Data Analysis in VR.
- *VR Gaming*: Designing computer games for VR.
- *Immersive Learning Environments*: VR-based educational experiences.
- *VR for Healthcare*: VR for medical training, therapy, and patient care.
- *VR-Based Training Simulations*: Simulation for training in high-risk environments.
- *Preservation of Cultural Heritage in VR*: Promote cultural heritage sites and artifacts.
- *Accessibility in VR*: Addressing inclusivity and usability for users with disabilities.
- *Ethical Considerations in VR*: Examining privacy, identity, and ethical challenges posed by VR.
- *Haptic Feedback Devices for VR*: Touching objects in VR.
- *Spatial Audio Design for VR*: Investigating techniques for realistic sound experiences in VR.

Language

English

Dates

The seminar will take place in the summer semester 2024 at the [VISUS building](#) in [room 00.012](#) on [Fridays at 9:45am](#) starting on [April 12th](#). There will be no preparation meeting, topics will be assigned during the first seminar class.

Contact

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