



European Project Semester

PROJECT OUTLINE

Project dates: March – June 2026

Title: Transcending reality in virtual reality

Project activity areas: Information visualization, Virtual Reality

Keywords: Virtual Reality, visualization metaphors, ergonomics, human-computer interaction, 3D affordances, UI/UX design

Tutor's name and coordinates

Client – End-user: UTTOP - LGP

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Project origin

UTTOP - LGP

Project technical background:

Virtual reality is a powerful and promising tool that offers the prospect of considerable advances and progress in several areas, including training and visualization. While VR is an excellent tool for faithfully reproducing reality, it also allows us to go beyond reality, freeing us from the constraints imposed by the physical world. In VR, it becomes possible to cancel out gravity or exceed the limits of on-screen visualization, for example, by surrounding oneself with 360-degree information or by appealing to primitive human senses or instincts. However, current virtual environments still too often reproduce 2D visualization mechanisms adapted to screens, for example by offering to view a web page in VR or by presenting a menu on a 2D screen floating in the 3D environment. Settling for these representations neglects one of the biggest advantages of VR, its immersive and interactive nature.

The aim of this internship is therefore to **imagine new ways of visualizing and interacting with information in VR**, and to implement a prototype of a virtual environment to present them, using Unity. If time allows, we will be able to test these new metaphors to compare them with what already exists and thus validate their interest and relevance. This project will thus require creativity and the ability to think outside of the box to propose innovative and creative visualizations: for instance, by drawing on expressive rendering to shift visual output from a purely functional interface toward an expressive medium supporting perceptual and emotional engagement.

Studied topics:

- Literature review on existing metaphors
- Imagination of new metaphors and visualization mechanisms
- Development of prototypes with Unity
- Tests and comparison with existing solutions