

# Comparative Analysis of Visual Search Tasks in Reality and VR

Keywords: Visual Search, HTC Vive, Eye Tracking

## Overview

The student project aims to investigate and compare the performance of individuals carrying out searching tasks in both real-world and virtual reality (VR) environments. The rapid advancements in VR technology have introduced new opportunities for immersive experiences, but their impact on cognitive tasks like searching and locating objects is not fully understood. Some of the scenarios, where people consciously or unconsciously perform searching tasks include, but are not limited to: training, education and learning, gaming and entertainment, retail and e-commerce.



This project seeks to bridge that gap by examining the efficiency, accuracy, and user experience of search tasks performed in virtual environments (VEs) and real life.

## Tasks

In this thesis, your task will be to compare individuals' performance in visual search tasks. You will create two identical setups: one in real life and one in VR, to compare participants' behavior in both environments. You will work with an eye-tracking device and the data obtained from it.

## Workpackages

- Literature research on the comparison of searching tasks performance in VR and reality
- Familiarization with the hardware, including the eye tracking device
- Evaluation of the objective and subjective metrics that are possible to use for comparing the searching tasks performance in VR and reality
- Implementation of the virtual environment used for testing purposes
- Conduct a user study, incl. data analysis
- Intermediate and final presentation
- Written report

## Skills

- Basic programming skills, preferably in C#/C++, Python
- Unity and VR experience is a plus
- Working with data from different sensors is a plus
- Strong communication and interpersonal skills

## Results

The results of this thesis have to be summarised in a written report and will be presented to the ICVR in a 20min talk.

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