Bachelor Thesis (Master Thesis):

Screen Search for visually impaired people (in VR)

ACCESS@KIT - Zentrum für digitale Barrierefreiheit und Assistive Technologien

Background: The desktop is a visual medium that presents many hurdles for visually impaired people. They often have to zoom in and out a lot with the screen magnifier to find the relevant elements. It can be very time-consuming to find labels that cannot be found using the program's internal search function, such as window names or individual control elements. So far, there does not seem to be a screen search that searches for information on the rendered screen and highlights and displays it directly on the screen.

Objective: Development and implementation of an innovative screen search that searches for information on the rendered screen and highlights and displays it directly on the screen. The solution should offer improved user-friendliness for visually impaired people.

Tasks:

- Analyze the current challenges and limitations of on-screen visual search for visually impaired people
- Design a solution to improve the screen search
- Implementation of the proposed solution
- Optimization to make the solution suitable for real-world use
- Design and conduct a user study to validate the solution

Requirements:

- Programming experience
- Interest in accessibility, usability and UI/UX design

Additional tasks as master thesis:

- Implementation and evaluation of the solution in VR in Unity
- Conception and development of additional functions such as quick access

If you are interested or have any questions,
please contact Michael Schneider (michael.schneider3@kit.edu).