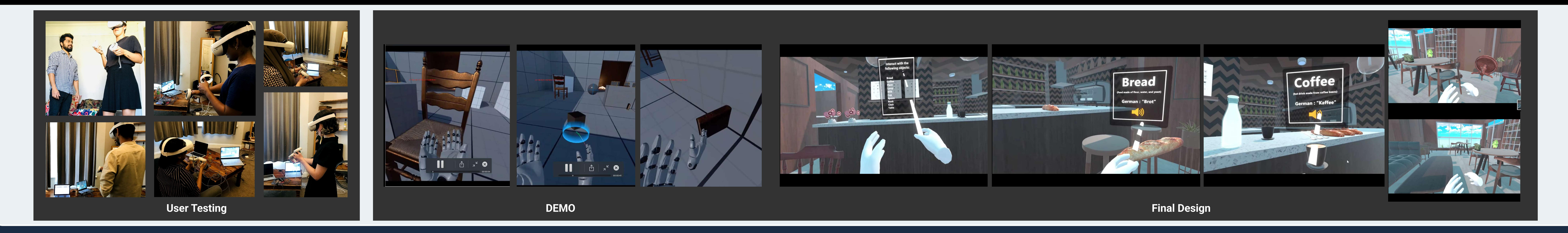
### Abstract

The study presents the research on using Virtual Reality (VR) technology as an effective medium for learning a foreign language. It investigates VR technology's impact and effectiveness in learning a Foreign Language (FL). This research involves a mix of qualitative and quantitative research methods. This design-oriented research involves developing an immersive virtual reality product for learning Foreign Language (FL) that tests the FL vocabulary retention compared to conventional learning methods.



### Study Methodology

1] Literature Review: 50 papers with relevant topics were studied thoroughly to outline language learners' challenges in learning a foreign language.

2] Primary Research:

a) Expert Interview: An interview with a German language tutor revealed the limitations of existing conventional learning resources, such as less interactive medium and lack of exposure to native speakers. It also outlined factors affecting learning FL, such as learner's motivation, approach and challenges.

b) Survey- A survey revealed the most common challenges in language learning and motivational factors and confirmed the acceptance level of the proposed intervention to their problems.

c) User Interviews and Feedback- A Sketchstorming session was conducted to learn how users expect the immersive VR language learning platform to look and function.

d) Usability Testing- Each design iteration was tested by 2 users. Formative usability

# **VR-Sprachassistent** Foreign Language Learning in immersive Virtual Reality

### Introduction & Background

This thesis extends the scope of VR in education which is otherwise primarily used for entertainment, medical, and business. The potential challenges language learners face, and factors influencing the foreign language learning process were identified. To address these issues, a fully immersive platform, "VR-Sprachassistent", was developed using User Centered Design (UCD) approach. The impact and effectiveness of VR and learners' memory retention in such a learning environment were tested.

### Design Process

## **Testing & Evaluation**

Formative evaluation, summative evaluation, post hoc questionnaire and memory retention tests were conducted in this research.

- Formative evaluation informed the design and functionality of the product. • Summative evaluation improved the product's performance by reducing cybersickness and task completion time and enhancing task
- performance. • A post hoc Questionnaire collected opinions, comments and ratings of the product.
- Two standardized tests were conducted with two groups (VR learning and Picture-Word learning) to verify the vocabulary retention in both groups.