Karlsruhe Institute of Technology

INSTITUTE OF INFORMATION SYSTEMS AND MARKETING

Master Thesis

Eye-based and Voice-based Interactions with Information Dashboards Presented in Mixed Reality

Problem Description

Information dashboards refer to graphical user interfaces that compress visualized information on a single screen. In the age of big data, the usage of dashboards increased in order to support data-driven decision making. Traditionally, the interactions with dashboards are mainly enabled through mouse, keyboard, and touch interactions. Mixed reality (MR) technologies have the potential to enable data-driven decision making effectively by providing intuitive, hands-free access to dashboards in real-time. There is a need better understand how to design information dashboards using MR technology such as provided by Microsoft HoloLens. MR technologies enable eye-based, voice-based, and hand gesture-based interactions with dashboards. However, currently it is not clear how to combine these modalities in order to enable users in working with information dashboards.

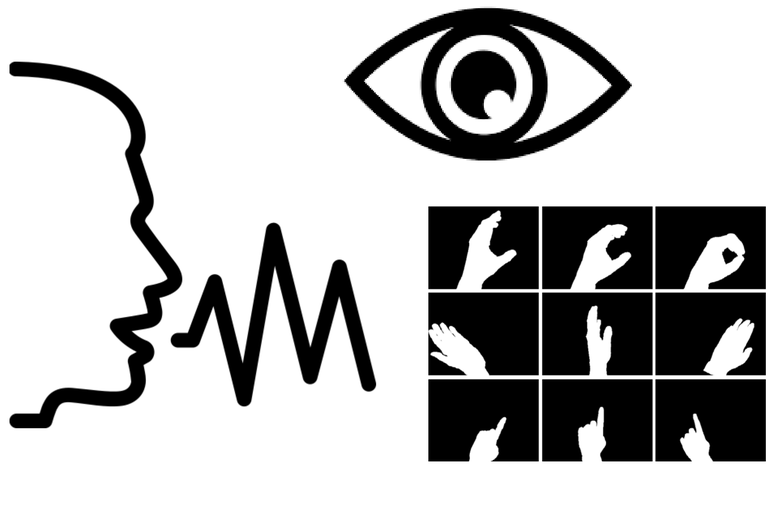
Goal of Thesis

- Investigate the current state of the art in mixed reality interactions with visualized information
- Develop eye-based and voice based interactions with information dashboards on HoloLens 2
- Design an experiment to collect empirical data in order to evaluate usability and task performance

Microsoft HoloLens

Requirements

- Strong time management and communication skills
- Strong analytical skills
- Have some programming skills and high **motivation to improve programming skills (e.g, Java or C#)**
- Interest in cutting age technologies
- Good English skills



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