

Guided Cooking with Augmented Reality



Virtual instructions during the cooking process

Special Focus

The emphasis of this work was placed on the conception and development of the prototype using user-oriented methods and thereby focusing on two important issues:

The first question deals with the adaption of recipes for an Augmented Reality cooking assistant. For this purpose, a system has been developed which can be used to adapt any arbitrary recipe.

The second question investigates whether gaze control is suitable for the intuitive use of a cooking assistance application with Augmented Reality glasses. To answer this question, the gaze control implementation in the prototype was evaluated with the help of user testing.

Since the application may contain important instructions outside of the field of view, a visual signal has been added to direct the user's attention.

Abstract

As a new standalone medium Augmented Reality opens up many new possibilities and challenges for application design and content. The author of this work took up the challenge of taking cooking, an activity that has accompanied people's daily lives for thousands of years, to a new dimension.

This master's thesis addresses the proof of concept of a gaze controlled cooking assistant for Augmented Reality glasses. For this purpose, a prototypical iOS application was developed as part of a user-centered design process, which accompanies the user throughout the cooking process. The virtual cooking instructions appear in the user's field of view at the appropriate location when they are needed.

Further, this thesis deals with the question of whether the developed application can counteract the estrangement from the real world caused by technical developments, such as computers, smartphones, virtual reality or even modern kitchen appliances.



Activation of button with gaze control



User testing

Result and Future Work

As part of this thesis, the proof of concept of a cooking assistant for Augmented Reality glasses was successfully completed and the possibility of implementing such an application was proven.

It has been determined that gaze control is appropriate for the user's interaction with the application, as it can be integrated most naturally into the cooking process compared to voice or gesture control.

In order to improve the usability of the gaze control, different sizes and shorter activation times of the buttons should be examined in future user tests. As the focus of the tests in this thesis was on the user's interaction with the application and its overall experience, future work should focus more on the design of the virtual elements to optimize the usability of the application.

With the help of the developed system, recipes can be integrated into the Augmented Reality cooking assistant. A software with which these can be entered into the system via a clear user interface could simplify and speed up this process.



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