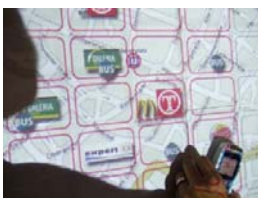


Comparing Touch-based and Distance-based Information Transfer for Mobile Devices

Diploma Thesis (6 months)



Project Description:

Today's mobile phones are equipped with several input technologies, such as a high-resolution camera or NFC readers. In conjunction with public displays (paper-based and digital ones) these phones can use the displayed information in several ways. On the one hand, users can directly interact with the information by touching it. Furthermore, they are able to store information using the *Shoot & Copy* method introduced in a former diploma thesis. In this thesis, various techniques will be examined.

Large paper-based posters can have several NFC tags attached to them in order to retrieve URLs to specific services. Unfortunately, changing the displayed information is only possible by creating a new poster. While this also works with front-projected displays, using NFC on digital or back-projected displays seems to be impractical because of the produced radiation by the screens. Thus, a virtual NFC system based on the mobile phone's camera allows the combination of digital displays and touch interaction. For this, the display needs to be interactive (e.g. by using a SmartBoard). This digital approach needs to be evaluated against the analogue one which has already been implemented in a former diploma thesis.

In addition, this thesis should evaluate a distance-based approach using the mobile phone's camera. With this technique, users are able to *photograph* the information of interest. This allows transferring data associated to the captured information, such as movie trailers or music tracks. This method ensures at least a semi-private interaction as others can only see that somebody is capturing information.

For this diploma thesis, the student is expected to implement the digital approach. In addition, s/he needs to create a scenario (e.g. buying a movie ticket) which can then be evaluated using the four mentioned techniques. The thesis should state, which technique suits best in the scenario.

Required skills:

Object-oriented programming language, Mobile computing

Contact: Sebastian Boring
sebastian.boring@ifi.lmu.de
FLUIDUM Research Group,
Media Informatics, Amalienstrasse 17, Room 206
T: 089 2180 4684
<http://www.fluidum.org>

Diploma Thesis
Start: immediately

Keywords:
Ubiquitous Computing, Camera equipped mobile device, Large displays, Information transfer, NFC