Proseminar Medieninformatik
Wintersemester 2016/17

Prof. Andreas Butz
Malin Eiband (malin.eiband@ifi.lmu.de)
20.10.2016
Agenda

• Goals
• Orga
• Scientific literature review
• Topic assignment
Agenda

• Goals

• Orga

• Scientific literature review

• Topic assignment
Goals

• LEARN TO WORK SCIENTIFICALLY
• Prepare for your Bachelor thesis
• Learn something about a new topic
• Practise your English
Agenda

• Goals
• Orga
• Scientific literature review
• Topic assignment
Question-based Review

• Research question + paper about this question
Deliverables

- Paper: two pages text in English
- Presentation in English
Process

Today: Topic assignment

02.11.16 Submit short presentation
03.11.16 Short presentations
24.11.16 Submit paper outline
05.01.17 Call for papers
10.01.17 Submit presentation
12.01.17
09.02.17

Your work

Your presentations
Deadlines

- All submissions via UniWorX, zipped
- Short presentation submission (one introductory slide): **02.11.2016**
  - Lastname_Title_Spr.pdf/.pptx
- Paper outline submission: **24.11.2016**
  - Lastname_Title_Ou.pdf
- Call for papers: **05.01.2017**
  - Lastname_Title_Pa.pdf
- Presentation submission: **10.01.2017**
  - Lastname_Title_Pr.pdf/.pptx
Dates

• Short presentations (90 seconds): 03.11.2016

• Presentation sessions:
  • 12.01.2017
  • 19.01.2017
  • 26.01.2017
  • 02.02.2017
  • 09.02.2017
General

• Absence <= 1 day
• Meet all deadlines
• Participate!
• Questions?
  • Preferred communication tool: Mattermost, not E-Mail
    • Address: https://chat.medien.ifi.lmu.de/mimuc/channels/ps-wise-201617
    • Desktop client available: https://about.mattermost.com/download/
    • Extra session for questions?
Short Presentation

- Introduce your topic and research question in 90 seconds (in English)
  - Sounds easier than it is – think carefully about what you want to say
  - One single slide
Paper Outline

• An optimal outline already contains everything you want to write as ordered bullet points

• The basis for your paper – investing time here pays off!

• Template on the webpage
Paper

• Two pages in English (TWO PAGES!!!)
• References on a third page! At least three references
• Interesting title (not the research question)
• LaTeX-format (template on webpage)
• Use illustrations, diagrams, images to illustrate/ summarize
• Submission: PDF
• Structure of general research papers
User Preference for Smart Glass Interaction
Florian Bemann

Abstract—Smart glasses are wearable devices providing the user always with information, using augmented reality techniques. In contrast to other devices such as smartphones they can be used without having the screen the users is to, so that it would be more convenient to use smart glasses in nearly every situation. Especially for on-the-go and working situations, where information access is crucial, smart glasses are appropriate. To fully exploit these possibilities, new interaction concepts are necessary. This paper’s aim is to evaluate which interaction concepts are preferred by users, using smart glasses in different scenarios. For this purpose, different available smart glass devices, improving current devices is still required and ongoing, so currently impossible interaction concepts could become integrated in next versions. If they turn out to be providing a good user experience, it will evaluate which concepts are preferred by users regarding (read) acceptance and performance. In the paper’s second part, 22 gestures-based concept proposals are one easy to use, suitable to be methods. Therefore, my paper is based on existing student examining acceptance and performance of interaction concepts on head worn displays, such as smart glasses and augmented reality devices.

Index Terms—Smart glasses, Head worn displays, HMD, interaction, input techniques, body interaction, interaction interfaces, Wearable, Augmented Reality

1 INTRODUCTION

After smartphones have revolutionized most people’s everyday life within the last 10 years, the fast developing market of mobile computing devices offers more and more devices such as tablets and smart watches are similar to smartphones, but allow other applications. Smart glasses are a completely different concept. They integrate in the user’s life differently, what can offer some new use cases. To get the most benefit, other interaction concepts are required. In this paper, I present some possible interaction concepts for smartphones and evaluate how they are preferred among the users. Promising the best user experience, I will focus on gesture-based concepts.

2 CLASSIFICATION OF INTERACTION CONCEPTS FOR SMART GLASSES

There exist several alternatives for exploiting the possible interaction concepts. One is distinguishing the concepts into: free form and output. The former is defined as not requiring any extra device other than the smart glass to be performed and detected. Out of this group can further be selected a group of gesture-based concepts, which I will discuss in the second part of this paper. For the first part, considering all possible interaction concepts for smart glasses, I will divide concepts into the groups touch, non-touch and headband [5].

• headband: interactions with any device that has to be held in hands, e.g. smartphone, controller, joystick.
• touch: tapping and gesturing on body surfaces or wearable devices, providing tactile feedback. In the following are mentioned the input areas, face, hands, wearable devices, the smart glass itself and at least other body parts.
• non-touch: other movements or gestures. Mostly gestures performed with hands, also voice recognition, eye tracking, wrist detection

3 INTERACTION CONCEPTS’ PREFERENCE AMONG USERS

This section is based on a user-study [16] where users were shown an effect of a game task and they were asked to perform a input actions of their choice to cause that effect. Based on the percentage of which actions the user had chosen and a rating and interview afterwards, I determined which interaction concepts are the most preferred in each group.

4 TOUCH INPUTS

The main gestures input is using a finger to perform a gesture on the head part (e.g. the nose) of a study participant. In similarity to touchscreens and touch pads, the user can make input actions on both aforementioned. Input on body parts rely on the same input techniques as on touchscreens. Introducing the face led to some intervention in this study (19). Non-contacting another study by Bonett I would nevertheless recommend hand-to-face input. It provides a good level of acceptance and low intrusiveness [5]. Touching the smart glass itself reached a 20% portion only in the study of Tang et al., even though it is one of the two primary input methods of Google Glass. As mentioned for hand-to-face input I would thus teach touching on the HMD a bit better as well. Especially its social acceptance is good (better than on face) even though it is considered as unexpected, but of aesthetic impact and meaning of face gestures in other ethnic groups [1]. On the other hand the performance of device is less than on face, due to its small bezel area [1]. A common wearable, the smart watch, was preferred by only 7.6% [1]. Interestingly 12.6% preferred a ring [9], a rather uncommon wearable. Another interesting concept is a digital watch, promising a good performance in quick and easy recognizability as it’s benefit by the users. The social acceptance on the belt depends from the interaction height. For short interaction users did not feel very comfortable using all areas around the belt. When performing longer interaction users preferred the front part better. An exception were non-touch users preferring the belt with the other hand, but in a prompting one.

3.2 Non-touch inputs

In-air gestures are the by far most preferred means of interaction methods. Only 9% of the non-touch actions chosen were non-touch [5]. In-air gesture concepts, I will focus on in a later section. These include headband, wrist detection and voice commands are low practical issues [9]. Even though voice command is one of both Google Glass primary input methods, it reached only a 5% portion [19]. Anyway it would regard voice command as a good input method because of its very intuitive. Its low score’s reason might be a low social acceptance in public places, where the study was conducted. Overall non-touch interactions was rated a little bit better than touch concepts [15].

3.3 Inputs using headband devices

Headband devices should only be a compromise solution. Their preference score was the lowest compared to the groups touch and non-touch.
Paper

• Main Part
Design Space, deep discussion of related work. Don’t only tell what is in the paper, think beyond!

• Conclusion
Short summary + your opinion, which is based on your main section

REFERENCES

LFE Medieninformatik
Proseminar Medieninformatik WS 2016/17
Presentation

- 15 min presentation (in English) + 5 min discussion (in English or German)
- No slide template – get creative!
  - Many tipps on the web, e.g. http://lifehacker.com/5810271/how-to-create-presentations-that-dont-suck
- Mainly pictures!
- Interest the audience! Do not make us fall asleep! (https://www.ted.com/)
- Anticipate questions and prepare answer slides (backup-slides)
### Bewertungsbogen für Proseminararbeiten

**Bitte nur die grünen Felder editieren!**

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>Seminar:</td>
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<td>Betreuer:</td>
<td>Christian Mal</td>
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**Schriftliche Ausarbeitung**

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<td>Sprache</td>
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**Gesamtnote der schriftlichen Ausarbeitung**

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**Präsentation**

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**Gesamtnote der Präsentation**

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**Evaluation sheet**

75%

25%
Agenda

- Goals
- Orga
- Scientific literature review
- Topic assignment
Research in General

• Starting point for your work: given related scientific work
  • First orientation
  • Contains references in the “References” chapter
  • Contains first keywords
  • Not every source can be used (e.g. online articles without author, contributions in online communities)
  • References: Papers, conferences, journals, books, online sources with author and date of access
Finding Literature

- Almost all literature is available online!
  - Google/Google Scholar ([http://scholar.google.com](http://scholar.google.com))
  - ACM Digital Library ([http://portal.acm.org](http://portal.acm.org))
  - Citeseer ([http://citeseer.ist.psu.edu](http://citeseer.ist.psu.edu))
  - OPAC der Universitätsbibliothek ([http://opacplus.ub.uni-muenchen.de](http://opacplus.ub.uni-muenchen.de))
- For the full functionality log in at „LMU E-Medien-Login/Datenbanken“ and find the needed library (e.g. ACM)
Finding literature
Why should I care about citations?

- Copyright/ intellectual property
- Foundation of scientific work
- Citations links belonging work together
- Reader needs all the information you had to check if you are correct
Citations

• Quotation
  • Direct (in quotation marks)
  • Indirect

• No secondary citation

• Citation style: APA 6 (for this work):
  see http://www.edu.lmu.de/apb/dokumente-und-materialien/dokumente-bachelor/hinweise-zur-apa.pdf

• Wikipedia: not citeable (but good for quick research)
## Citations

### IN-TEXT REFERENCE

<table>
<thead>
<tr>
<th>BOOKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>One author – in-text reference placement</strong></td>
</tr>
<tr>
<td><em>Note:</em> There are two main ways to use in-text references. Firstly, to focus on the information from your source – ‘information prominent’. Secondly, to focus on the author – ‘author prominent’.</td>
</tr>
</tbody>
</table>
| ‘Information prominent’ *(the author’s name is within parentheses)*:  
The conclusion reached in a recent study (Cochrane, 2007) was that... |
| Not valid for: Journals, newspapers, newsletters |
| OR |
| ‘Author prominent’ *(the author’s name is outside the parentheses)*:  
Cochrane (2007) concluded that... |

<table>
<thead>
<tr>
<th>Chapter in edited book</th>
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<tbody>
<tr>
<td>A discussion about Australia’s place in today’s world (Richards, 1997) included reference to...</td>
</tr>
<tr>
<td>OR</td>
</tr>
<tr>
<td>Richards (1997) proposed that...</td>
</tr>
</tbody>
</table>

### JOURNAL, NEWSPAPER & NEWSLETTER ARTICLES

<table>
<thead>
<tr>
<th>Journal article with one author – separated paging (paginated by issue)</th>
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<tbody>
<tr>
<td>If each issue of a journal begins on page 1, include the issue number in parenthesis immediately after the volume number in the Reference List.</td>
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</tbody>
</table>
| In an earlier article, it was proposed (Jackson, 2007)...

<table>
<thead>
<tr>
<th>Journal article with two authors – continuous paging throughout a volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the journal volume page numbers run continuously throughout the year, regardless of issue number, do not include the issue number in your Reference List entry.</td>
</tr>
</tbody>
</table>
| Kramer and Bloggs (2002) stipulated in their latest article...
OR |
| This article on art (Kramer & Bloggs, 2002) stipulated that... |
Plagiarism

• No plagiarism, NO plagiarism, not even a little!
• Plagiarism
  • Material of third parties, without reference
  • Direct quotations, without reference
  • copied pictures, diagrams or graphics without reference
• Your work will be checked automatically
• Work with plagiarism will fail the course!
• [http://www.medien.ifi.lmu.de/lehre/Plagiate-lfl.pdf](http://www.medien.ifi.lmu.de/lehre/Plagiate-lfl.pdf)
Writing style

- Everything you write in your paper must be supported by literature!
- Think about a logical structure of your arguments
- Scientific writing is: objective, precise and neutral
- CHECK: Grammar, SPELLING
- Numbers from zero to twelve are written as text
- Spell out abbreviations like “i.e.”, “e.g.”
- DON‘TS:
  - Unprecise quantities (“high”, “slightly”, “almost”, “a little bit”)
  - Fillers (“now”, “well”, “quasi”)
  - Pseudo-Arguments (“naturally”, “as expected”)

Citavi

- literature administration

http://www.ub.uni-muenchen.de/schreiben/literaturverwaltung/citavi/index.html
EndNote

- literature administration

http://www.ub.uni-muenchen.de/schreiben/literaturverwaltung/endnote/index.html
JabRef

- literature administration

http://www.jabref.org/
Mendeley

- literature administration

https://www.mendeley.com/
LaTeX

- Text formatting
- No WYSIWYG, instead creation of source code
- Integration of pictures and diagrams in the final document
- Integration of references (with linkage to Citavi, EndNote, BibTeX…)
- Very nice typography
- No formatting mistakes when creating the text
- Huge number of online tutorials available
Example creation of a document

```latex
\title{Mein Titel}
\tableofcontents
\section{Überschrift}
Text des Kapitels 1 ...
\subsection{Unterüberschrift}
Text des Kapitels 1.1 ...
\cite{Huber}

@article{Huber,
  author = "Egon Huber",
  title = "Implementing ...",
  journal = "Computer",
  year = "2001",
  ...}
```

Fertiges Dokument
Agenda

• Goals
• Orga
• Scientific literature review
• Topic assignment
Privacy in a mobile, connected world
# Topic Assignment

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Topic List

• See „ps_questions_ws1617.pdf"
• Research question can be changed (with my agreement)