Proseminar Medieninformatik
Wintersemester 2017/2018

Prof. Heinrich Hußmann
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19.10.2017
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
Process

- Research topic $\rightarrow$ understand it $\rightarrow$ find literature $\rightarrow$ write paper
Process - timeline

- Today: Topic assignment
- 08.11.17 Submit short presentation
- 09.11.17 Short presentations
- 26.11.17 Submit paper outline, abstract & lead paper
- 14.01.17 Submit paper
- 21.01.18 Submit final presentation
- 08.11.17 Submit short presentation
- 09.11.17 Short presentations
- 26.11.17 Submit paper outline, abstract & lead paper
- 14.01.17 Submit paper
- 21.01.18 Submit final presentation
- 23.01.18 Final presentations
- 25.01.18 Final presentations
Submissions

- All submissions via UniWorX, zipped

- Short presentation submission: Wed 08.11.2017 (23:59)
  - Lastname_Title_Spr.pdf

  - Lastname_Title_Ou.zip

- Paper Submission: Sun 14.01.2018 (23:59)
  - Lastname_Title_Pa.pdf

- Presentation submission: Sun 21.01.2018 (23:59)
  - Lastname_Title_Pr.pdf
Dates

- Short presentations:
  - Thursday, **09.11.2017 (13:00 - 15:00)**, Amalienstr. 17, A105

- Presentation sessions:
  - Tuesday, **23.01.2018 (13:00 - 16:00)**, Amalienstr. 17, A105
  - Thursday, **25.01.2018 (13:00 - 18:00)**, Amalienstr. 17, A105
General

• Absence \( \leq 1 \) day and only upon agreement
• Meet **all** deadlines
• Participate!
  • Preferred communication tool: **slack**
    
    https://mimuc.slack.com/messages/ps-ws1718

Desktop client available:  
https://slack.com/downloads/osx/  
https://slack.com/downloads/windows/

→ Questions via Slack or Mail
→ Personal meetings on demand
Short Presentation

• Introduce your topic in 90 seconds (in English)
  • Sounds easier than it is!
    → think carefully about what you want to say
• One to three slides
  • Submit as .pdf (zipped!) → no animations possible
• Prepare the talk well! You will get feedback about the presentation style for the final presentation.
Paper – Outline

• LaTeX-Paper template on the webpage
  • Link: http://www.medien.ifi.lmu.de/lehre/ws1718/ps/template/ps_latex_template.zip

• An optimal outline already contains everything you want to write as ordered bullet points (story & golden line)

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

• Structure of general research and survey papers

• Interesting title (not the research topic)

• Submission: Outline & Abstract in template as one PDF (zipped!) remove placeholder text and images!
Paper – Abstract

DO: ~150 words

Part 1: Introduce topic
1. What is the large scope?
2. What is the specific problem addressed?
3. Why is the problem important?

Part 2: Summarize state of the art
4. What’s the state of the art in research? What are the major findings/results?
5. Take Away Message: What are the implications on a larger scale? How does it change the bigger picture?

Part 3: Discuss state of the art (your opinion)
6. What are your thoughts on e.g. state of the art, opportunities, limitations,...?
Final Paper Submission

• Two pages prose text in English
• References on a third page (at least seven references)
• Include Feedback you get on Outline & Abstract
• Use figures, diagrams, images to illustrate / summarize when it actually supports your explanations (refer to them!)
• Submission: PDF (zipped!)
Paper

Introduction

What is the problem?

Why is it important?

Introduce your paper/approach

User Preference for Smart Glass Interaction

Florian Bemmern

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 lifting the scene the user is in, so that it would be possible to use smart glasses in nearly every situation. Especially for on-the-go and working situations where smartphones can’t be used, this kind of devices can be appropriate. Even though they provide interesting potential, today's glasses are still very limited in achievable interaction concepts. Therefore the main goal of this paper is to provide an overview of possible interaction concepts for smart glasses, independent of their technical feasibility. The currently available smart glass devices are still not advanced enough and research companies are expected to provide more usable devices in near future. By evaluating which concepts might be performed by users regarding social acceptance and performance, I hope to provide insights into new features for smart glasses to be integrated in near future. In the paper I will suggest an overview of possible interaction concepts for smart glasses. 

Index Terms — Smart glasses, Interaction, input techniques, 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 things. While tablets and smart watches are similar unappropiate-on-the-go smartphones, smart glasses are a completely different concept. They integrate in the user’s daily use, what could offer some new use cases. To gain the most benefit, other interaction concepts are required. In this paper I present some possible interaction concepts for smart glasses and evaluate how they are performed 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 structuring the possible interaction concepts. One is distinguishing the concepts into free form and others. The former is defined as requiring any body 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 focus on 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, free-form and hand-held [1].

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

3 INTERACTION CONCEPTS’ PREFERENCES AMONG USERS
This section I based on a user elicitation study [5] where users were shown a effect of a game task, and they were asked to perform a input actions of their choice to cause that effect. Based on the percentages of which actions the user had chosen a rating and interview afterwards, I determined which interaction concepts are the most preferred among each group.

3.1 Touch Inputs
The most preferred touch input is using a finger to perform a gesture on the hand prints (chosen by 39% of the study participants [5]). Its similarity to touchscreens and touchpads leads me to the same input actions as on both aforementioned. Other on body actions are finger, leg, hand back and forearm. Interaction with the task ha a quite low rating in this study [5], but examining another study by Bosch [1] I would recommend hand to finger input. It promises a good level of accuracy and low interference [1]. Touching on the smart glass itself reached a 7% portion only in the study of Tong et al., even though it is one of the two primary input methods of Google Glass. As mentioned for hand-to-finger input I would rate touching on the FWRD a bit better as well. This due to social acceptance is good better than on face [1] which is not a consequence of appearance, but of hygiene issues and meaning of face gestures in other cultures [1]. On the other hand the performance on-device is better than on-face, due to its small helting area [1]. A common touch the smart watch was performed by 15% [5]. Interestingly 17% preferred a ring [5], a rather uncommon wearable. Another interesting concept is a digital bell, promising a good performance. Its quick and easy reachability was seen as benefit by the users. The social acceptance on both depends on the interaction length. For short interaction tasks did not feel very uncomfortable using all areas around the belt. When performing longer tasks, uses other than the front pockets were perceived as less suitable [5]. Although there wasn’t user preference scores comparing the belt with the other input concepts, bell is a promising one.

3.2 Non-touch Inputs
In-air gestures are the by far most preferred non-touch input method. 99% of the non-touch actions chosen were in-air gestures [5]. In-air gesture concepts, I will focus on in a later section. The methods eye tracking, walk detection and voice command are less performed by users [5]. Even though voice command is one of both Google Glass primary input methods, it reached only a 1% portion [5]. Anyway I would regard voice command as a good input method because its very intuitive. Its low scores reason might be a low social acceptance in public contexts, where the study was conducted in. Overall non-touch interaction was rated a little bit better than touch concepts [5].

3.3 Inputs using hand-held devices
Handheld devices should only be a compromise solution. Their preference scores were the lowest compared to the groups touch and non-touch

0.54
Main part

Design Space, deep discussion of related work. Don’t only tell what is in the paper, think beyond. Connect the papers to a meaningful text, don’t just list summaries!
Paper

Main part

Conclusion (Discussion)

Short summary & your opinion (based on your main section)

What is missing in related work?

5 Conclusion

This paper explored possible interaction concepts for smart glasses, regardless of current out-of-place virtual interfaces. The benefits of a new interface design, such as a low-cost, lightweight, and compact device, were discussed. The concept considered was a hand-held device with gesture-based control. The main contribution of this paper is the exploration of a new interaction approach for smart glasses, which could be used in various applications, including entertainment, education, and healthcare. The proposed concept is expected to be feasible in the future, with further research needed to address the challenges of integration and user acceptance.
Presentation

- 15 min presentation (in English) + 5 min discussion (in English)
- No slide template – be creative!
  - Many tips on the web, e.g., here
  - Very good book: Zen oder die Kunst der Präsentation
- **Max. 10 words per slide** – Use figures and diagrams!
- Get the audience interested! Don‘t make us fall asleep! (https://www.ted.com/)
- Anticipate questions and prepare answer slides (backup-slides)
Evaluation sheet

What goes without saying:

All 4 submissions (short presentation slides, outline, final presentation slides & paper) have to be submitted completely and in time

Incomplete or delayed submission may not be considered

67%

33%
Agenda

• Goals
• Orga

• Scientific literature review
• Topic assignment
Research in General

• Starting point for your work: your topic
  • First orientation
  • Look for synonyms, leading researchers, frequently cited literature
  • Not every source can be used (e.g., online articles without author, contributions in online communities, Wikipedia)
  • References: Papers, conference proceedings, 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)
  • ACM Digital Library (http://portal.acm.org)
  • Citeseer (http://citeseer.ist.psu.edu)
  • IEEE Xplore (http://ieeexplore.ieee.org)
  • Springer (https://link.springer.com)
  • Elsevier (https://www.elsevier.com/catalog)
  • ScienceDirect (www.sciencedirect.com)
  • OPAC der Universitätsbibliothek (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

Judgment of natural perspective projections in head-mounted display environments

Full Text: PDF Get this Article

Authors: Frank Steinicke University of Münster
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Markus Lappe University of Münster
Pete Williemsen University of Minnesota Duluth

Published in:
Proceeding VRST ’09 Proceedings of the 16th ACM Symposium on Virtual Reality Software and Technology
Pages 35-42
ACM New York, NY, USA ©2009

Recent authors with related interests Concepts in this article

Tools and Resources

Switch to single page view (no tabs)

6 Citations


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

• Wikipedia: not citeable (but good for quick research)
• Citation style: APA 6 (for this work):
  see http://www.edu.lmu.de/apb/dokumente-und-
  materialien/dokumente-bachelor/hinweise-zur-apa.pdf
## Citations APA

### IN-TEXT REFERENCE

### BOOKS

<table>
<thead>
<tr>
<th>Reference Type</th>
<th>In-text Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>One author – in-text reference placement</td>
<td><em>(Information prominent)</em> (the author’s name is within parentheses): The conclusion reached in a recent study (Cochrane, 2007) was that... OR <em>(Author prominent)</em> (the author’s name is outside the parentheses): Cochrane (2007) concluded that...</td>
</tr>
</tbody>
</table>

**Note:** 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’.

### JOURNAL, NEWSPAPER & NEWSLETTER ARTICLES

#### Journal article with one author – separated paging (paginated by issue)

In an earlier article, it was proposed (Jackson, 2007)...

#### Journal article with two authors – continuous paging throughout a volume.

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
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”)

LFE Medieninformatik - Proseminar Medieninformatik WiSe 17/18
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

\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",
  ...
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/
Agenda

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

What we expect:

• Share your background literature & knowledge
  → still, lead paper have to be different, specific to your focus
• Work of both partners should focus on the same aspects
  • Example:
    • Human side: Describe the dynamics of human attention (e.g., visual)
    • Computer side: Describe how a system can gather a person’s attention
• Coordinate your presentations (keep repetitions to a minimum)
• However, discrepancies & limitations can also be included
## Topic Assignment

<table>
<thead>
<tr>
<th>#</th>
<th>Topic A (user perspective)</th>
<th>Topic B (tech perspective)</th>
<th>Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Context-Aware Recommender Systems for Learning</td>
<td>Evaluating Recommender Systems (in e-Learning)</td>
<td>Sarah*</td>
</tr>
<tr>
<td>2</td>
<td>Factors &amp; Measurements of Happiness (Psychological Basics)</td>
<td>Factors &amp; Measurements of Happiness (Tech-supported)</td>
<td>Renate</td>
</tr>
<tr>
<td>3</td>
<td>Effects of Human-guided Meditation on Mental Health</td>
<td>Effects of Tech-guided Meditation on Mental Health</td>
<td>Renate</td>
</tr>
<tr>
<td>4</td>
<td>Mindfulness and its (Human-guided) Training for Mental Health</td>
<td>Mindfulness Tech-support for Mental Health</td>
<td>Renate</td>
</tr>
<tr>
<td>5</td>
<td>Psychological Basics of Awareness &amp; Behaviour Change (human-guided, e.g. therapy)</td>
<td>Tech-support for increased Awareness &amp; Behaviour Change</td>
<td>Renate</td>
</tr>
<tr>
<td>6</td>
<td>Human-support for Self-Reflection</td>
<td>Tech-support for Self-Reflection</td>
<td>Renate</td>
</tr>
<tr>
<td>7</td>
<td>Role of Affective States / Emotions on Problem Solving</td>
<td>Emotional Design of Learning Applications</td>
<td>Christina</td>
</tr>
<tr>
<td>8</td>
<td>Cognitive Performance over the Day (Circadian Rhythms in Human Cognition)</td>
<td>Building Cognition-Aware Systems</td>
<td>Christina</td>
</tr>
<tr>
<td>9</td>
<td>Impact of Stress on Human Cognition (e.g., Memory)</td>
<td>Measures, Sensors, and Techniques for Stress Recognition</td>
<td>Christina</td>
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<tr>
<td>10</td>
<td>Intelligibility and Mental Models</td>
<td>Assessing Intelligibility in Context-Aware Systems</td>
<td>Christina</td>
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<tr>
<td>11</td>
<td>Effectiveness of Personal Trainer/Coaches for Health</td>
<td>Effectiveness of Ubiquitous Persuasive Technologies in Health</td>
<td>Nadja**</td>
</tr>
</tbody>
</table>

*sarah.aragon.bartsch@ifi.lmu.de
**nadja.terzimehic@ifi.lmu.de

Topics can be adapted (with our agreement!)
<table>
<thead>
<tr>
<th>#</th>
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<tr>
<td>1B</td>
<td>Franziska Lang</td>
<td>5A</td>
<td>Sybil Bast</td>
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<td>1A</td>
<td>Elena Liebl</td>
<td>8B</td>
<td>Felix Dietz</td>
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<td>6A</td>
<td>Jessica Ma</td>
<td>2B</td>
<td>Tobias Fütterer</td>
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<td>Philipp Mieden</td>
<td>4B</td>
<td>Anna-Carina Gehlisch</td>
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<td>Rene Nespithal</td>
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<td>Katharina Winkler</td>
<td>9A</td>
<td>Dennis König</td>
</tr>
<tr>
<td>3B</td>
<td>Wladislaw Meixner</td>
<td>11A</td>
<td>David Dodel</td>
</tr>
</tbody>
</table>
Further Information on LaTeX
Installation

- Wenn noch nicht vorhanden: TeX-Implementierung und LaTeX-GUIs/-IDE installieren, z.B.:
- Download des LaTeX-Templates
  - .tex- und .bib-Dateien mit IDE öffnen, Source anschauen und nachvollziehen
  - LaTeX \(\Rightarrow\) PDF einstellen, .tex-Datei zweimal kompilieren
  - Bei Bedarf weitere LaTeX-Tutorials, Foren etc. konsultieren
LaTeX-Ressourcen

- LaTeX-Klassen und Dokumentation (http://www.ctan.org)
- A (Not So) Short Introduction to LaTeX2e (http://www.ctan.org/tex-archive/info/lshort/english/)
- LaTeX Symbols List (http://www.ctan.org/tex-archive/info/symbols/comprehensive/)
- Grafiken importieren und formatieren (http://tug.ctan.org/tex-archive/info/epslatex/english/epslatex.pdf)
- Deutschsprachige FAQs (http://www.dante.de/faq/de-tex-faq/html/de-tex-faq.html)
- BibTeX-Tool und Dateiformat zur Verwaltung von Bibliographien und deren Einbindung in LaTeX
  - Fachliteratur-Referenzen werden online bereits vielfach im BibTeX-Format angeboten (z.B. ACM, IEEE)
  - How-To: http://www.bibtex.org/Using/de/