Tangible and Embodied Interaction
Proseminar Sommersemester 2013

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Overview

- Goals
- Organization
- Introduction to the process and tools of research
- Assignment to the topics
Goal

Proseminar:

- **Detailed knowledge**: focused work on one topic
- **Overview over the research field**: attending the presentation of others.
- **Transfer of knowledge**: discuss your knowledge in various contexts.

Basic techniques of research

Basic knowledge of academic writing
Course of events

- 5 Meetings à 4 presentations
- In three weeks: meeting for questions and tips for the presentation
- 17th of June: first presentations
- If you need advice:
  - email Julie
  - website
In general

- Important: constant presence (one joker)
- Participation in discussions
- Independent and rigorous literature review
- Correct format: citations, images, etc.
- Correct formulations
Presentation
Presentations

- Introduce your topic to computer scientists
- 15 presentation + 5 minutes discussion (in English)
- Slides in English
- Handouts in English (1-2 pages, 25 print-outs)
- Presentation on your Laptop or on Julie‘s (test beforehand)
- Nice Slides, not too much text! (tips in the next meeting)
- Interest the audience! Do not make us fall asleep!
- Anticipate questions and prepare answer slides (backup-slides)
Article
Article

- Keep the structure of general research papers (tips in the next meeting!)
- Keep the LaTeX-format (see website)
- 2-3 pages
- In English
- Use illustrations, diagrams, images to illustrate your point
- Present a good structure of your topic.
Literature review

- The assigned papers are your starting point.
- Task: find and reference a third paper in your article
- Read, Read, Read (!) to get a sense on „what are the problems?“ and „what are existing solutions?“
- By reading other articles...
  - You understand the general structure of articles and why this structure is useful.
  - Articles point you to other work which might be more specific and more interesting to your topic.
  - Do not cite web pages without reference to author or online forums.
  - Referencing web pages: secure a copy of the page at it‘s current state and indicate the date of this snapshot in your article‘s reference!
- Sources: Conferences and Journals
Literature Review

Find papers 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)
- OPAC (Universitätsbibliothek) (http://opacplus.ub.uni-muenchen.de)

Language: mostly English
Access

Access to literature databases (ACM, IEEE) via LRZ-VPN and – proxy:
http://www.lrz-muenchen.de/services/netzdienste/proxy/

Access to ACM portal and IEEE via LRZ-Proxy:
https://docweb.lrz-muenchen.de/cgi-bin/nph-webdoc.cgi/000110A/http/portal.acm.org/portal.cfm

Access to journals:
http://docweb.lrz-muenchen.de/
The ‘Referenced’ and ‘cited by’ trick
Why correct citations are important?

- Copyright
- Basis of research
- "It seems obvious that typing on mobile phones can be improved with tactile feedback."
- Your claim is usually based on previous observations and claims
- Others need to be able to validate the correctness of your claim based on referenced paper.
- Do not take credit for a claim of someone else.
How to cite...

- Indicate reference for direct and indirect citations
- Direct citations (literal takeover) of text in quotation marks
- Avoid secondary quotes
  - Don’t cite Wikipedia
Sample citations…

- Author’s name
- Title
- Source conference or journal


Plagiarism

- Plagiarisms are not tolerated!
  - Foreign materials that are not referenced as such
  - Copied parts of text
  - Copied images, diagrams or graphics without source

- In case of violation, you will not pass this seminar
  - [http://www.medien.ifi.lmu.de/lehre/Plagiate-IfI.pdf](http://www.medien.ifi.lmu.de/lehre/Plagiate-IfI.pdf)
Article

- Do not claim something, which was not proven by someone else or yourself.
- Keep a logical structure of your argument
- Factual, clear and neutral writing
- Spell check

William Strunk, Jr. „The Elements of Style“
  - http://www.bartleby.com/141/
General structure

- Abstract (ca. 150 words)
- Introduction/Motivation
- Main part: Overview/Classification
- Conclusion/Discussion
- Bibliography
LaTeX
What is LaTeX?

- Document markup language for the TeX typesetting program
- No WYSIWYG
- Principle: division of content and visual representation
- Standard for academic publications

Advantage:

- Automatic generalization of structure, index, bibliography etc.
- Simple formatting of mathematical formulae
- Simple management and integration of literature
Formatting

- Mainly automatic via LaTeX and CLS files
  - No chapter 1.2 if not a chapter 1.1. exists
  - Automatic line breaks between paragraphs

- Images and tables need to be referenced in the text

- **Submission: LaTeX source + PDF**
  - Source includes .tex, .bib, images etc. but no .aux, .log, .bbl etc.
  - ZIP-archive of submission
Create LaTex documents

\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",
  ...
}
How to get started...

- Install TeX and LaTeX-GUIs/-IDE:
  - Windows: MikTeX (http://www.miktex.org/) + TeXnicCenter (http://www.toolscenter.org/)
  - Mac OS: MacTeX (http://tug.org/mactex/), TeXShop IDE included (http://www.uoregon.edu/~koch/texshop/index.html) or TexMaker (http://www.xm1math.net/texmaker/)

- Download LaTeX-Templates
  - Open .tex- and .bib files with IDE, look at source and try to understand it.
  - Configure LaTeX => PDF, compile .tex-file twice
  - Consult LaTeX tutorials, forums etc. in case of problems
LaTex-resources

- LaTeX classes and documentation (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/)
- LaTeX introduction in german (http://www.latex.tugraz.at/l2kurz.pdf)
- FAQs in german (http://www.dante.de/faq/de-tex-faq/html/de-tex-faq.html)
- Use BibTex to manage and import literature
  - Online data bases offer references in BibTeX format (e.g. ACM, IEEE)
  - How-To: http://www.bibtex.org/Using/de/
Topics
Dates

13th Mai  | Today
3rd June  | Question and preparation session
17th June | Session 1
24th June | Session 2
1st July  | Session 3
8th July  | Session 4
15th July | Session 5
22nd July | Submission of your article
Session 1:
TUIs in virtual and real environments

- Graspable User Interfaces
- TUI – connecting physical objects and surfaces with digital data
- Tangible Augmented Reality – combining tangible input with augmented reality output
- Tangible Tabletop Interaction – combining interaction techniques and technologies of interactive multi-touch surfaces with TUIS
Session 2: Application Domains of TUIs

- TUIs for Learning
- TUIs for problem solving and planning
- TUIs for tangible programming
- TUIs for entertainment, play and edutainment
Session 3: Application Domains of TUIs continued

- TUIs for music and performance
- TUIs for musical composition
- TUIs for social communication
- TUIs for information visualization
Session 4
Embodied Interaction

- Embodied user interfaces: computation embedded and embodied in physical devices
- Embodiment and phenomenology
- Body-centric interaction
- On-body interaction
Session 5
Theoretical Frameworks: descriptive, predictive and generative power

- Frameworks for post-WIMP interfaces
- Classification of TUIs
- Tangible interaction framework
- Frameworks on mappings: coupling the physical with the digital
Further steps

- Start reading the assigned literature
- Read literature ‘around‘ it and select the third paper you want to reference in your article

Questions:
- Come to the question and preparation session
- Email Julie and set a date for passing by her office.