

Übung zur Vorlesung Mensch-Maschine-Interaktion

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End of Term Essays

- One topic per person
- Topics have been assigned via e-mail
- Language is German (if you don't speak German contact us)
- 2000 – 2500 words
 - Use your own words, copy-paste authoring fails the course
- Essays will be available to the public (www.medien.ifi.lmu.de)
 - Make an effort!
 - Use scientific methods and language (only reliable sources).
 - Do not use 3rd party material unless you cite it proper.
- Essay must be valid HTML. Only use following tags:
 - `<h1></h1>`, `<h2></h2>`
 - `<p></p>`, ``, ``
 - ``

Where to find material

- To get an overview:
 - Google
 - Wikipedia
- For a deeper understanding and scientific papers:
 - Google Scholar (<http://scholar.google.com>)
 - Citeseer (<http://citeseer.ist.psu.edu/>)
 - ACM Portal Access through LMU Library:
 - » <https://docweb.lrz-muenchen.de/cgi-bin/doc/nph-webdoc.cgi/000110A/http/portal.acm.org/portal.cfm>
 - » Use LRZ or Campus Account

Where to find material II

- If you find interesting papers:
 - Read it
 - Check the reference list.
 - Use Google scholar to find papers that have cited to original since publication.



[Advanced Scholar Search](#)
[Scholar Preferences](#)
[Scholar Help](#)

Scholar [All articles](#) [Recent articles](#)

Results 1 - 10 of about 65,7

All Results

[M Weiser](#)

[G Abowd](#)

[J Hightower](#)

[G Borriello](#)

[Some computer science issues in **ubiquitous computing**](#) - [group of 8](#) »

M Weiser - ACM SIGMOBILE Mobile Computing and Communications Review, 1999 - portal.acm.org

... This article explains what is new and different about the computer science

involved in **ubiquitous computing**. First, it provides ...

[Cited by 902](#) [Related Articles](#) - [Web Search](#) - [BL Direct](#)

References

- How to cite sources correctly?
 - <http://www.medien.ifi.lmu.de/lehre/arbeiten/richtlinien.xhtml>
- Try to cite the best possible reference:
 1. Book
 2. Journal article
 3. Conference or Workshop proceedings
 4. Webpage

Heuristic Evaluation

Why do we need Evaluations?

- Ensure functionality (effectiveness)
 - Make sure that the target task **can** be performed
- Ensure performance (efficiency)
 - Make sure that a given task can be performed *within* resource limits (e.g., time, system resources)
- Customer / User acceptance
 - What is the effect on the user?
 - Does the user *like* the product?
 - Is the user pleased with operating the product?
- Identify Problems
 - For specific tasks
 - For specific users

How do we Evaluate?

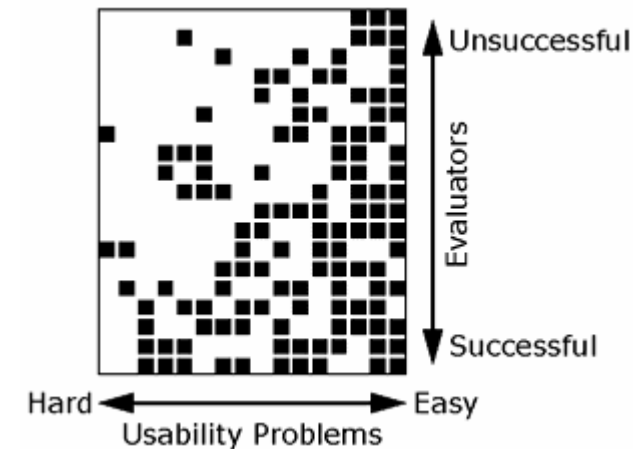
- Different approaches
 - Validation of system specifications
 - Controlled user studies
 - » Comparative
 - » Qualitative
 - Field studies
 - Usage observations

And in Reality?

- Usability Methods are seldom applied!
 - Developers are not aware of the techniques
 - Fear of extra cost for evaluation
 - Developers run out of time
 - Necessity is neglected (“The product works”)
 - Teams often think what they understand is understood by everyone
- (Usability) Evaluation is crucial for almost every product
- Most Evaluation techniques are cheap and fast
 - Discount Usability Engineering:
http://www.useit.com/papers/guerrilla_hci.html
 - Heuristic Evaluation
<http://www.useit.com/papers/heuristic/>

Heuristic Evaluation

- Proposed by Nielsen and Molich 1990
- Wildly accepted: Google yielded 58,000 hits in 2005
- Usability method for an iterative design process
- A user interface is evaluated by a small number of experts
- Evaluators judge the user interface by its compliance to a set of rules or guidelines – the **heuristics**
- *Biggest pitfall*: One Evaluator can hardly find all problems alone!
- Therefore have several Evaluators inspect a product independently
- Aggregate the findings only after everybody is done



Steps for Heuristic Evaluation

- Preparation:
 - Define or agree on heuristics (http://www.useit.com/papers/heuristic/heuristic_list.html)
 - Prepare a complete usage scenario (walkthrough) that each evaluator goes through
 - Decide on some way to capture the evaluation session and results
 - » Form/questionnaire
 - » Videotaping
 - » Observing and written assessment
- Evaluation:
 - All evaluators go through the complete scenario – at least twice or until no more problems are found
 - Take notes on problems found and document them carefully
- Analysis:
 - Aggregate list of usability problems from individual forms
 - Rate problems by severity

Example Heuristics

- **Visibility of system status**
- **Match between system and the real world**
- **User control and freedom**
- **Consistency and standards**
- **Error prevention**
- **Recognition rather than recall**
- **Flexibility and efficiency of use**
- **Aesthetic and minimalist design**
- **Help users recognize, diagnose, and recover from errors**
- **Help and documentation**

Severity Rating

- Used to prioritize problems
- Helps in deciding whether a product is ready for release or not
- Three influencing factors:
 - Frequency (often occurring problems are more severe)
 - Impact (Can users overcome the problem or find a workaround)
 - Persistence (Does the problem occur repeatedly or only under certain conditions)
- Scale to rate problems:
 - 0** = I don't agree that this is a usability problem at all
 - 1** = Cosmetic problem only: need not be fixed unless extra time is available on project
 - 2** = Minor usability problem: fixing this should be given low priority
 - 3** = Major usability problem: important to fix, so should be given high priority
 - 4** = Usability catastrophe: imperative to fix this before product can be released

(<http://www.useit.com/papers/heuristic/severityrating.html>)

Usability Report

- Write a usability report containing all problems identified
- Structure by severity and by functionality groups
- Give also suggestions for improvement
- Give an assessment of the products usability