LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

Hauptseminar Medieninformatik

Malin Eiband I Hanna Schneider I Daniel Ullrich

Hauptseminar Medieninformatik I München I 2017-10-24

Übersicht

Voraussetzungen:

Aktuell im Master (Medien-)Informatik / MCI
Englische Sprachkenntnisse

Forschungsthemen:

Jedes Thema wird von (max) 2 Studenten eigenständig bearbeitet

Lernziel der Veranstaltung: Wissenschaftliches Arbeiten

Selbstständige Literaturrecherche
Analyse und Einordnung von Forschungsergebnissen
Schreiben einer wissenschaftlichen Ausarbeitung

Schriftliche Ausarbeitung in Englisch (6-8 Seiten, LaTeX-Template siehe Webseite)
Abschlusspräsentation (20 Minuten + 5 Minuten Diskussion)

Webseite: www.medien.ifi.lmu.de/lehre/ws1617/hs/

Organisatorisches

- Umfang: 2 SWS / 6 ECTS-Credits

- Prüfer:
  Prof. Dr. Andreas Butz

- Betreuer:
  Malin Eiband, malin.eiband@ifi.lmu.de
  Hanna Schneider, hanna.schneider@ifi.lmu.de
  Dr. Daniel Ullrich, daniel.ullrich@ifi.lmu.de

Organisatorisches (2)

- Präsenztermine: ausgewählte Termine, Dienstag 16:00-18:00 Uhr
- Verschiedene Abgaben lt. Zeitplan
- Vorträge am Ende der Vorlesungszeit, Datum tbd
- Ort: Amalienstraße 17, Raum A105

- Verfügbare Plätze: 20

- Prüfungsmodalitäten:
  - Vorläufige Ausarbeitung / kommentierte Gliederung
  - 90-Sekunden-Vortrag (inkl. Abgabe)
  - Schriftliche Ausarbeitung
  - gegenseitige Begutachtung / Kommentierung
  - Überarbeitete schriftliche Ausarbeitung im vorgegebenen Format
  - Vortrag (zuvor Struktur, Entwurf abgeben!)

- Hinweis: Die Literatur ist überwiegend nur in englischer Sprache verfügbar. Gute englische Sprachkenntnisse sind für die Teilnahme erforderlich.

Schedule

Termin	Veranstaltung / Abgabetermin
24.10.17	Vorstellung und Themenvergabe
21.11.17	Abgabe: Ausarbeitung 1. Fassung
24.11.17	Abgabe: Folie 60-Sekunden-Vortrag
28.11.17	60-Sekunden-Vorträge (Beginn s.t.!) / Wie schreibt man Reviews?
03.12.17	Abgabe: Ausarbeitung 2. Fassung (für Review)
15.12.17	Abgabe: Reviews
19.12.17	Verteilung Reviews & Feedback
30.01.18	Abgabe: Ausarbeitung 3. Fassung (final)
06.02.18	Abgabe: vorläufige Folien
07-14.02.18	Probevorträge
15.02.18	Abgabe: finale Version der Vortragsfolien
19.02.18	Präsentationstag 1 (muss noch bestätigt werden)
20.02.18	Präsentationstag 2 (muss noch bestätigt werden)

Abgabetermine	Termine mit Anwesenheitspflicht

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Hauptseminar Medieninformatik

Research topics

#1

Decision Support Systems for Students

- In which areas do students need decision support?
- On which criteria do they base their decisions?
- How satisfied are students with their decisions?
- How can we use technical solutions to help students in their decision-making process?

Supervisor: Sarah Aragon Bartsch

Image source: http://www.keithrn.com/site/wp-content/uploads/2015/07/Reduced-Skyscape-image.jpg

#2

Technical Solutions to Support Career Choice

- How do people choose their career?
- What are influencing factors on career choice?
- How can technical solutions support career choice?
- How can these systems be evaluated?

Supervisor: Sarah Aragon Bartsch

Image source: https://blog.sesewa.org/wp-content/uploads/2017/07/career-choices-1.jpg

#3

The Definition of Presence

Problem: The terms immersion and presence are mixed in current research on VR related topics. However these terms are well discussed (e.g. Schubert et al. (2001)).

To do: Create an overview on the definition of presence and immersion in work that uses these terms as measured variable (e.g. Kaul et al. (2017); Willis et al. (2017)).

Outcome: Classification and Quantification of current usage of the terms in contrast to the established definitions.

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Supervisor: Christian Mai

#3

The Definition of Presence

(References)

- Kaul O.B., Meier K., Rohs M. (2017) Increasing Presence in Virtual Reality with a Vibrotactile Grid Around the Head. In: Bernhaupt R., Dalvi G., Joshi A., K. Balkrishan D., O'Neill J., Winckler M. (eds) *Human-Computer Interaction – INTERACT 2017*. INTERACT 2017. Lecture Notes in Computer Science, vol 10516. Springer, Cham

- Schubert, T., Friedmann, F., and Regenbrecht, H. 2001. The experience of presence: Factor analytic insights. *Presence* 10, 3, 266–281.

- Willis M., De Angeli A., Zancanaro M. (2017) Experience Probes: Immersion and Reflection Between Reality and Virtuality. In: Bernhaupt R., Dalvi G., Joshi A., K. Balkrishan D., O'Neill J., Winckler M. (eds) *Human-Computer Interaction – INTERACT 2017*. INTERACT 2017. Lecture Notes in Computer Science, vol 10516. Springer, Cham

#4

How to Quantify Collaboration

Problem: Collaborative systems supporting instructional tasks need to be evaluated. The used task has strong influence on the measurements (Pointer: Cruz et al. (2014)).

To do: Create an overview on existing tasks that evaluate instructional tasks with a focus on VR. Cluster them by the purpose explained in the corresponding work.

Outcome: An overview on existing tasks with reflection on when an how to use them.

Cruz, A., Paredes, H., Fonseca, B., Morgado, L., and Martins, P. 2014. Can Presence Improve Collaboration in 3D Virtual Worlds? *Procedia Technology* 13, 47–55.

Supervisor: Christian Mai

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#5

Contextual Factors of Mobile / Ubiquitous **Learning**

Learning Applications (e.g., Duolingo, Babbel etc.) are often designed as a one-size-fits-all approach → somewhat static and not able to adapt to a learner.

This Hauptseminar-project's goal is to shed light on the following question:

What are the **contextual factors** we need to include to provide both a **good learning outcome** and a **satisfactory user experience** and how can we measure them?

The list of factors can include but is not limited to:

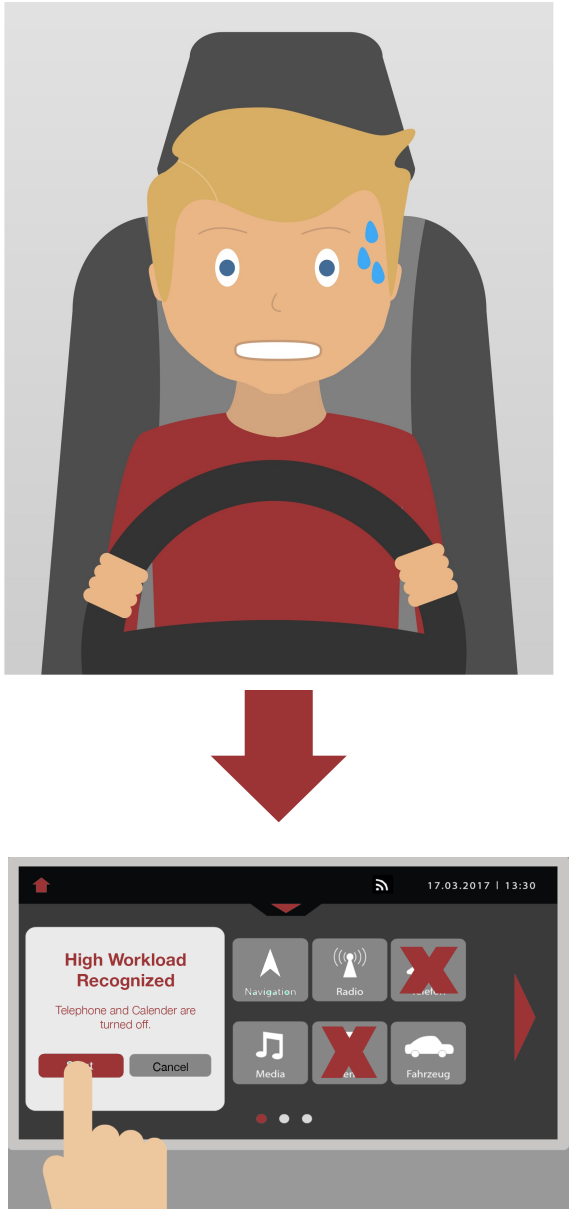
- Cognitive Performance
- Affective State
- Character Traits
- Metacognition
- Age / Gender
- Attitude
- Location
- Memory Capacity
- …..

Christina Schneegass - christina.schneegass@ifi.lmu.de

Supervisor: Christina Schneegaß

#6

Personalized Car Interfaces



Personalization describes tailoring a product to individual users' characteristics and preferences. In this paper, we want to investigate whether adapting a car interface to the driver's personality or current emotion (e.g. drowsiness, stress) can increase driver safety and comfort. For example, the car interface could show less information when the driver is already stressed due to high workload. Thus, we want to get an overview of current work regarding adaptive and personalized driver interfaces.

Supervisor: Sarah Völkel

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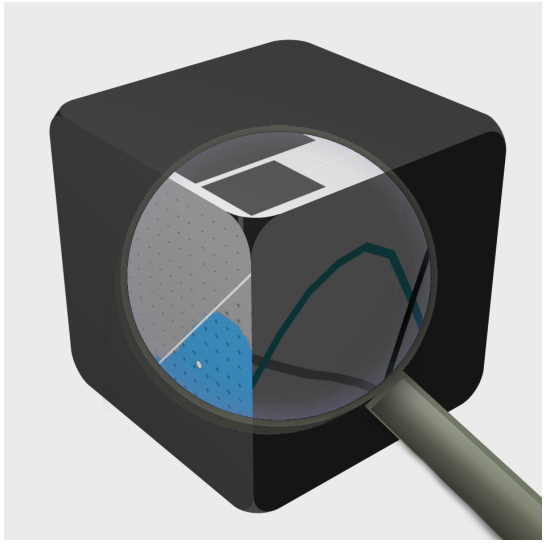
#7

Making Personalization Understandable for the User

Personalization describes tailoring a product to individual users' characteristics and preferences. We encounter personalization very often in our everyday life, e.g. recommendations for products on Amazon or TV shows on Netflix. However, users do not always understand how personalization algorithms work. What are possibilities to explain personalization to the user? In this paper, we want to gain an overview of possibilities used, paying special attention to brief comprehensible explanations.



Supervisor: Sarah Völkel

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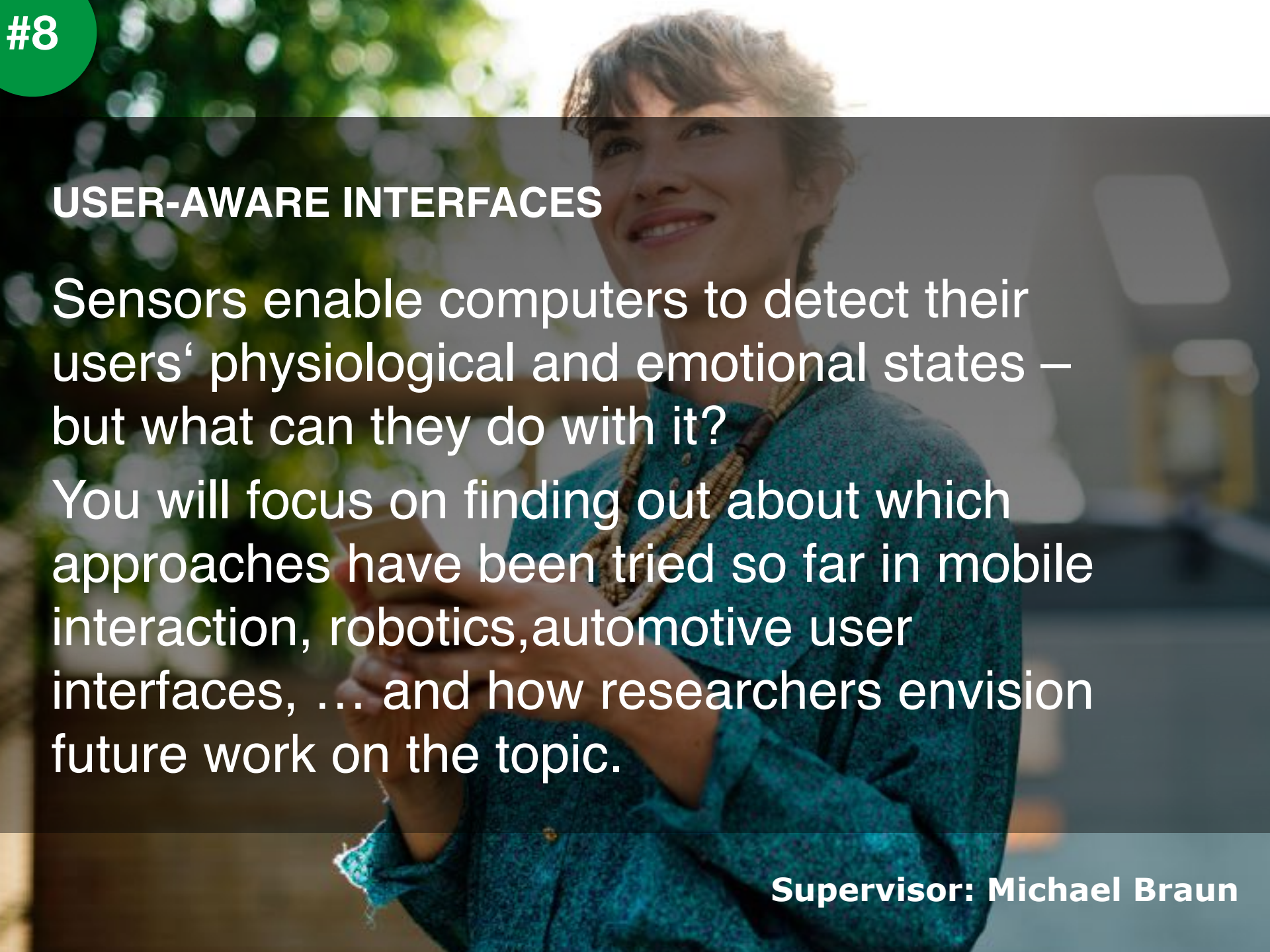
#8



USER-AWARE INTERFACES

Sensors enable computers to detect their users‘ physiological and emotional states – but what can they do with it?

You will focus on finding out about which approaches have been tried so far in mobile interaction, robotics,automotive user interfaces, … and how researchers envision future work on the topic.

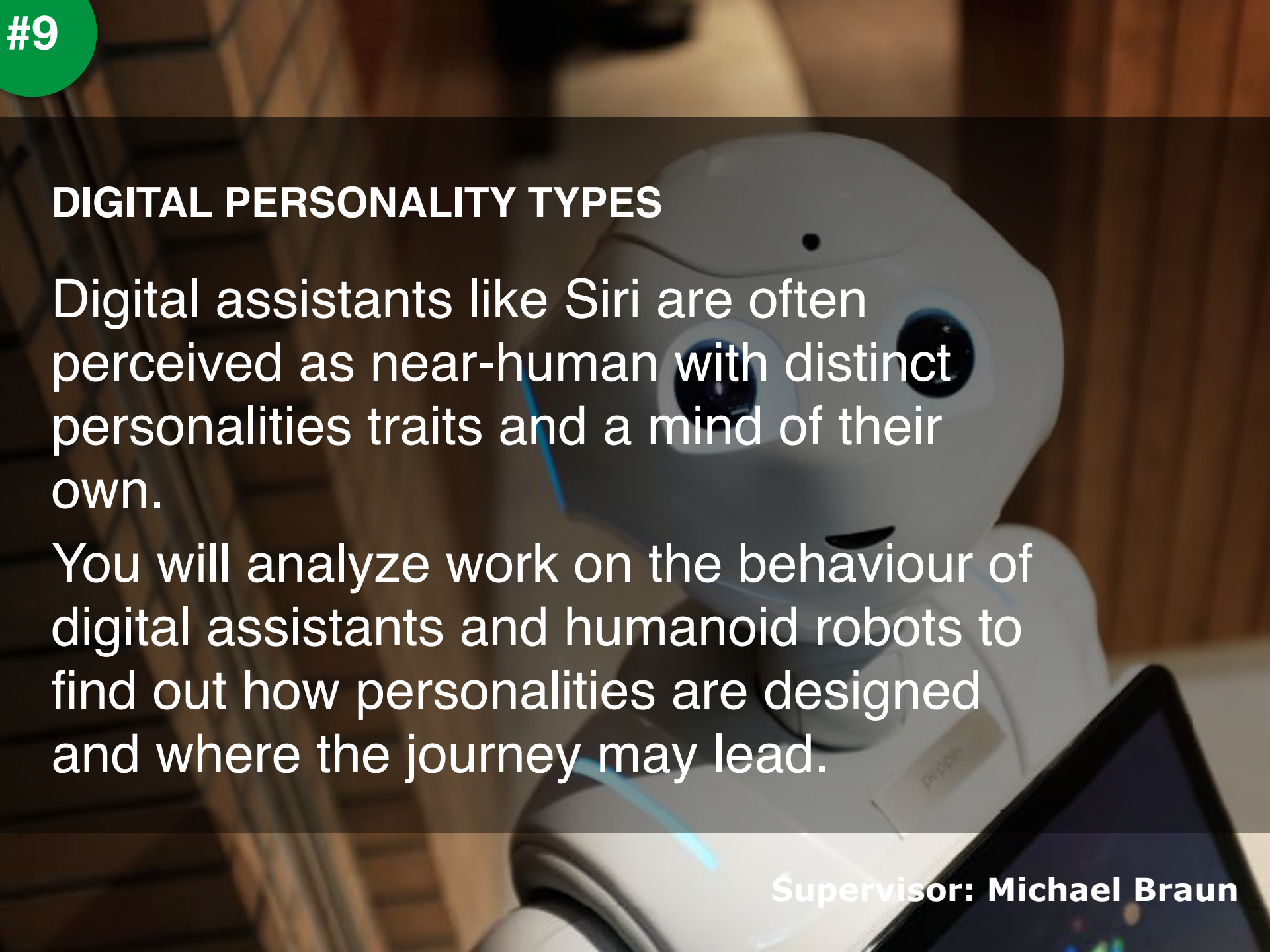
Supervisor: Michael Braun

#9

DIGITAL PERSONALITY TYPES

Digital assistants like Siri are often perceived as near-human with distinct personalities traits and a mind of their own.

You will analyze work on the behaviour of digital assistants and humanoid robots to find out how personalities are designed and where the journey may lead.



Supervisor: Michael Braun

#10

Applications of Human-Drone Interaction

- Unmanned Aerial Vehicles (aka drones) are now cheaper and available for consumers.
- What can we do with drones?
  - Communicating Directionality in Flying Robots
  - BitDrones: Towards Using 3D Nanocopter Displays as Interactive Self-Levitating Programmable Matter
  - Tactile Drones-Providing Immersive Tactile Feedback in Virtual Reality through Quadcopters
  - iSphere: Self-Luminous Spherical Drone Display
  - Jogging with a Quadcopter

Supervisor: Mohamed Khamis

#11

Controlling in Human-Drone Interaction

- Unmanned Aerial Vehicles (aka drones) are now cheaper and available for consumers.
- How can we interact with drones?
  - Drone and me: an exploration into natural human-drone interaction
  - Drone & Wo: Cultural Influences on Human-Drone Interaction Techniques
  - Daedalus: a sUAV for human-robot interaction
  - atural user interfaces for human-drone multi-modal interaction
  - Action Elements of Emotional Body Expressions for Flying Robots
  - Emotion Encoding in Human-Drone Interaction
  - Survey on Natural Interaction Techniques for an Unmanned Aerial Vehicle System
  - A System Architecture for Hands-Free UAV Drone Control Using Intuitive Voice Commands

Supervisor: Mohamed Khamis

#12

How users perceive biometric authentication

- Biometrics are increasingly adopted for consumer products (e.g. iPhone X face recognition, Windows Hello)
- How do users feel about biometric authentication?

  - Understanding User Perspectives on Biometric Technology
  - Perception and Acceptance of Fingerprint Biometric Technology
  - A Survey about User Requirements for Biometric Authentication on Smartphones
  - Culture & biometrics: regional differences in the perception of biometric authentication technologies
  - Biometric Authentication on iPhone and Android: Usability, Perceptions, and Influences on Adoption

  Web:

  - https://www.forbes.com/sites/gabrielshaoolian/2017/10/13/how-iphone-x-will-kick-start-facial-recognition-acceptance/#44c0631cd599
  - https://www.emarketer.com/Article/How-Do-Consumers-Really-Feel-About-Facial-Recognition/1016556
  - https://www.emarketer.com/Article/Like-Not-Smartphones-with-Biometrics-Will-Soon-Norm/1016472

Supervisor: Mohamed Khamis

#13

A Review of the Use, Design, and Methods of Biometric Authentication

- Biometrics are increasingly used for authentication lately.
- What biometric data is collected and how does it improve authentication?
  - Design and Exploration of Mid-Air Authentication Gestures
  - A survey of biometric recognition methods
  - A Survey of Wearable Biometric Recognition Systems
  - What else does your biometric data reveal? A survey on soft biometrics
  - Touch me once and I know it's you! Implicit Authentication based on Touch Screen Patterns
  - Evaluating Behavioral Biometrics for Continuous Authentication: Challenges and Metrics

Supervisor: Mohamed Khamis

#14

Mental Health Training & its Effects on Body & Mind

Nowadays, people are looking for new ways to become and remain healthy in a stressful and hectic world. Some ways to do so are meditation, therapy*, hypnosis, progressive muscle relaxation, autogenic training, yoga, and so on.

- Together we will select **3 to 4 approaches** for the seminar.
- Which **changes of the mind and the body** can be reached by those approaches?
- How can **technology support** a healthy mind?

* Psychological therapies such as cognitive behavioural or metacognitive therapy

#15

Cognitive Dissonance in HCI

Cognitive dissonance refers to a contradiction within a person thoughts, beliefs, values, desires etc. and causes mental stress. Cognitive dissonance is used e.g. in education, therapy, consumer influence and recently introduced to HCI.

- What is **cognitive dissonance** and on which **theories** is it grounded?
- How can it be **detected and measured**?
- What strategies are used to **counteracted** it and reach self-affirmation?
- How can **technology** counteract or make use of cognitive dissonance?

#16

Mindfulness in HCI

Mindfulness is often seen as a state, skill or strategy to reach a higher awareness and self-understanding and calmness. Mindfulness is now settling as a new area in HCI.

- **What is mindfulness** exactly and how is it **reached**?
- How can **technology support** mindfulness?
- How can it be **tracked and measured**?

Supervisor: Renate Häuslschmid

#17

Conscious & Unconscious Mind

Humans think and act consciously but many times thoughts and actions are influenced by the inner, unconscious mind. Intuition and gut feelings, unexplainable behaviours, (negative) thoughts and feelings, misunderstandings etc. can be a manifestation of the unconscious mind bridging into consciousness.

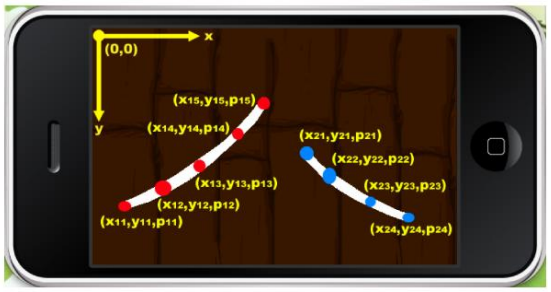
- How do the conscious and unconscious mind **relate to each other** (e.g. dual-process theory)?
- Can the two minds **communicate** with each other (e.g. in therapy)? How is such communication **reached**?
- How is consciousness and unconsciousness **measured**?

Supervisor: Renate Häuslschmid

#18

Inferring User Emotion from Mobile Interaction Behaviour

Example: Can we tell if the player is frustrated based on touch interactions?



Some starting points for your literature review:

- What Does Touch Tell Us about Emotions in Touchscreen-Based Gameplay?
- Towards affective touch interaction: predicting mobile user emotion from finger strokes
- Opportunistic and Context-aware Affect Sensing on Smartphones: The Concept, Challenges and Opportunities
- A Survey on Mobile Affective Computing

Supervisor: Daniel Buschek

#19

Inferring Content Relevance from Mobile Interaction Behaviour

You spend more time reading, scrolling, zooming, panning, touching etc. if you find the search result interesting.

Some starting points for your literature review:

- Mining touch interaction data on mobile devices to predict web search result relevance
- Detecting Good Abandonment in Mobile Search
- Towards better measurement of attention and satisfaction in mobile search
- Predicting User Satisfaction with Intelligent Assistants

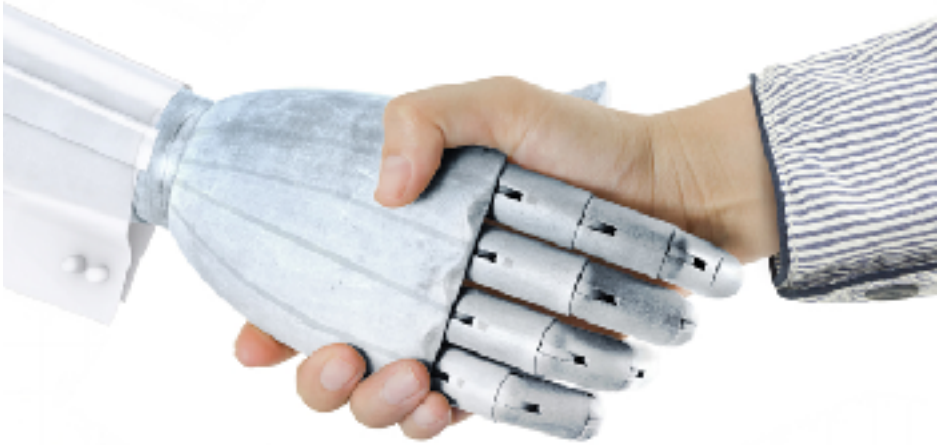
Supervisor: Daniel Buschek

#20

Over- and Under-Trust in intelligent system interaction

Short Description:

An adequate level of trust is crucial for successful interaction with intelligent systems. How can we measure trust? Which variables and circumstances lead to over/under-trusting a system (in particular: robots)?



References:

- Hancock, P. A., Billings, D. R., Schaefer, K. E., Chen, J. Y., De Visser, E. J., & Parasuraman, R. (2011). A meta-analysis of factors affecting trust in human-robot interaction. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, *53*(5), 517-527.
- Freedy, A., DeVisser, E., Weltman, G., & Coeyman, N. (2007, May). Measurement of trust in human-robot collaboration. In *Collaborative Technologies and Systems, 2007. CTS 2007. International Symposium on* (pp. 106-114). IEEE.

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Supervisor: Daniel Ullrich

#21

User-centered Evaluation of Personalized Systems

Personalized systems are pervasive in daily use and personalization is an active research area. In this project, we want to gain an overview of how researchers *evaluate* their work in user studies. In particular, we are interested in the methodology used (e.g., surveys, interviews), the number and demographics of participants, the variables assessed (e.g., usability, trust), the analysis (qualitative or quantitative) and the kind of systems that are presented. Thus, we want to identify best practices for user-centered evaluation of personalized systems.

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Supervisor: Malin Eiband, Hanna Schneider

fNIRS – Functional Near-Infrared Spectroscopy

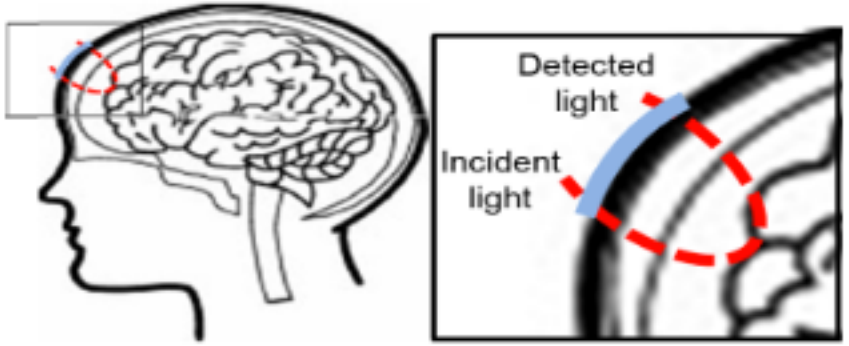

Figure 2: Light in the near-infrared range is pulsed into the brain cortex and the reflected light is detected.

Short Description:

Functional near-infrared spectroscopy is a research tool to quantify the user‘s mental state. The idea is to explore how this tool can help to evaluate user interfaces and input modality.

References:

- Stephanie Balters, Srinath Sibi, Mishel Johns, Martin Steinert, and Wendy Ju. 2017. Learning-by-Doing: Using Near Infrared Spectroscopy to Detect Habituation and Adaptation in Automated Driving. In *Proc. A*utomotiveUI '17. ACM, New York, NY, USA, 134-143. DOI: https://doi.org/10.1145/3122986.3123006
- Leanne M. Hirshfield, Rebecca Gulotta, Stuart Hirshfield, Sam Hincks, Matthew Russell, Rachel Ward, Tom Williams, and Robert Jacob. 2011. This is your brain on interfaces: enhancing usability testing with functional near-infrared spectroscopy. In *Proc. CHI ‘11.* ACM, New York, NY, USA, 373-382. DOI: https://doi.org/10.1145/1978942.1978996

#22

Evaluating Empowerment in HCI

- It is often claimed that technology can empower people and empowerment is of increasing concern in the HCI community.
- However, it is often unclear how we can determine whether a presented technology is empowering or not.
- In this paper, we want to gain an overview of methods used to evaluate empowerment in HCI.

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Supervisor: Malin Eiband, Hanna Schneider

#23

Cross-Cultural Perceptions of Privacy & Personalization

Perceptions of privacy and personalization are likely influenced by people‘s cultural backgrounds. In this paper, we want to gain an overview of prior work in this area.

Supervisor: Malin Eiband, Hanna Schneider, Florian Lachner

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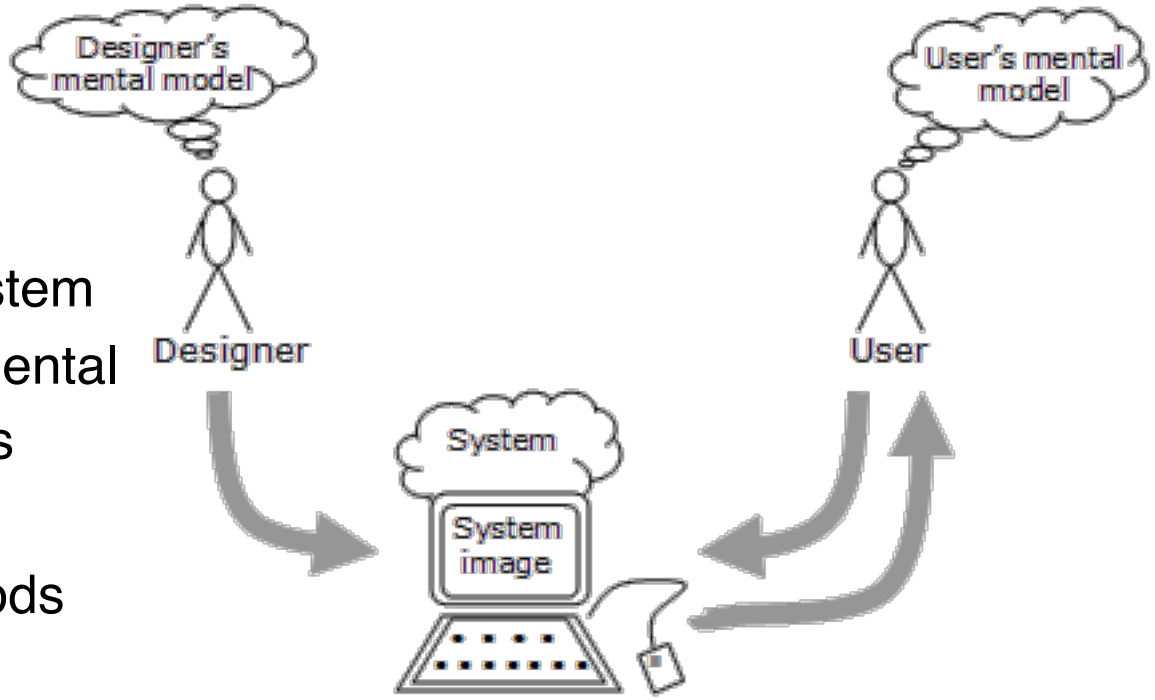
Elicitation of Mental Models

Mental models are user-dependent beliefs and conceptions about the system logic. However, eliciting mental models is not trivial. In this paper, we want to gain an overview of reliable methods and best practices for the elicitation of mental models.



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Supervisor: Malin Eiband, Hanna Schneider

Topics

#	Topic	Supervisor	Student 1	Student 2
1	Decision Support Systems	Sarah A. B.	Alice Nguyen	
2	Technical Solutions to Support Career Choice	Sarah A. B.	Julia Speckmeier	
3	The Definition of Presence	Christian Mai	Dimitri Hein	
4	Quantify Collaboration	Christian Mai	Martin Gross	Benedikt Reschberger
5	Contextual Factors of Mobile **Learning**	Christina Sch.	Anh Vu	
6	Personalized Car Interfaces	Sarah Völkel	Nicole Lippner	Zouhair Mazlani
7	Making Personalization Understandable	Sarah Völkel	Matthias Geiger	Zhan
8	User-aware interfaces	Michael Braun		
9	Digital personality types	Michael Braun	Anja Mainz	
10	Applications Human-Drone Interaction	Mohamed Khamis	Katharina Schwarz	Felix Frömel
11	Controlling in Human-Drone Interaction	Mohamed Khamis	Zhe li	
12	How users perceive biometric auth.	Mohamed Khamis	Leonhard Mertl	Jan Kaiser
13	Use, Design, Methods of biom. auth.	Mohamed Khamis		

Topics

#	Topic	Supervisor	Student 1	Student 2
14	Mental Health Training	Renate		
15	Cognitive Dissonance	Renate		
16	Mindfulness in HCI	Renate	Cedric Quintes	
17	Conscious and unconscious mind	Renate	Mario Schneller	Dimitri Reisler
18	Inferring User Emotion from Behaviour	Daniel Buschek	Ou Changkun	Florian Lehmann
19	Inferring Content Relevance	Daniel Buschek	Veronika Fuchsberger	
20	Over- and Udertrust	Daniell Ullrich		
21	User-centered Evaluation of Personalized Systems	Malin, Hanna		
22	Evaluating Empowement in HCI	Malin, Hanna		
23	Cross-cultural Perceptions of Personalisation and Privacy	Florian, Hanna, Malin	Elisaveta Karypidou	
24	Elicitation of Mental Models	Malin, Hanna		
25	fNIRS	Bastian		

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Distributing (scientific) knowledge

Distributing knowledge

- Books
- Articles in journals
- Articles in conferences
- Thesis (Bachelor, Master, PhD)
- On the internet (e.g. blogs, Wikipedia)
- Talks and lectures
- Personal communication
- Patents
- …

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- Personal communication
- Patents
- …

Peer review vs
no peer review

Scientific Conferences

- Before the conference
  - Topics and title are defined
  - Open call for scientific contributions (i.e., papers)
  - Papers get submitted
  - Papers get peer reviewed
  - Authors get notification and reviews
  - Final versions of accepted papers are submitted
- During the conference
  - One author gives a presentation
  - Typically in addition
    - Invited keynotes
    - Discussion panels
- After the conference
  - Papers are published in conference proceedings

How to find scientific articles?

- Libraries
- ACM digital library
- IEEE digital library
- Google Scholar, Citeseer
- The author's websites
- Web search
- OPAC der Universitätsbibliothek, http://opacplus.ub.uni-muenchen.de

- ACM, IEEE, and most other sources aren't freely available
- University has subscription for the most important sources

- Get a paper:
  - Try ACM, IEEE, … from the university network
  - Use Google (Scholar) to find a free source
  - Go to the authors' websites
  - Polite mail to the authors
  - Ask people from the library

How to access publications

Access databases (ACM, IEEE, EZB) through our university network (LRZ-VPN und –Proxy):

http://www.lrz-muenchen.de/services/netzdienste/proxy/browser-config/

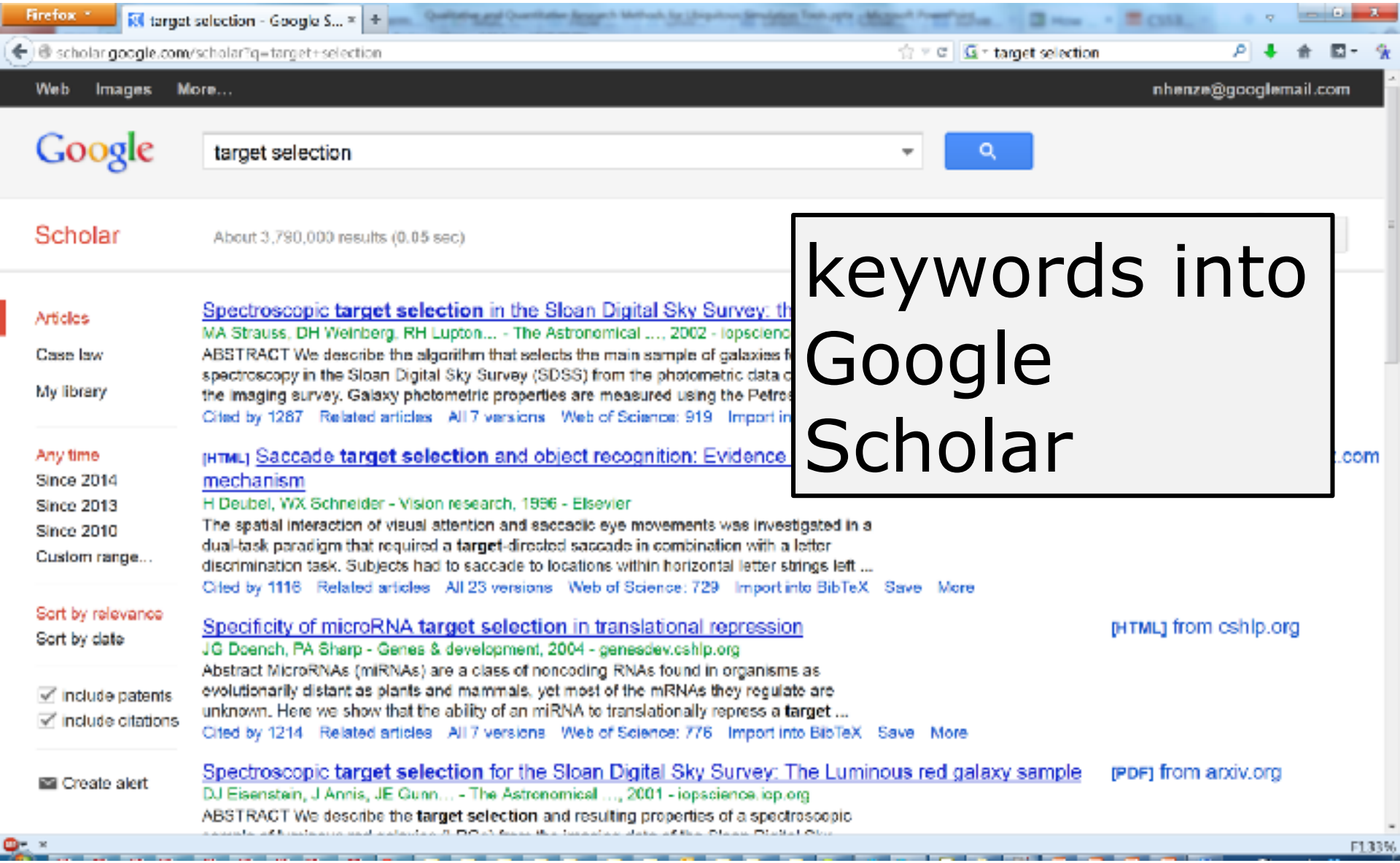
Hint: (Open source) software to manage references:

JabRef: http://jabref.sourceforge.net/download.php

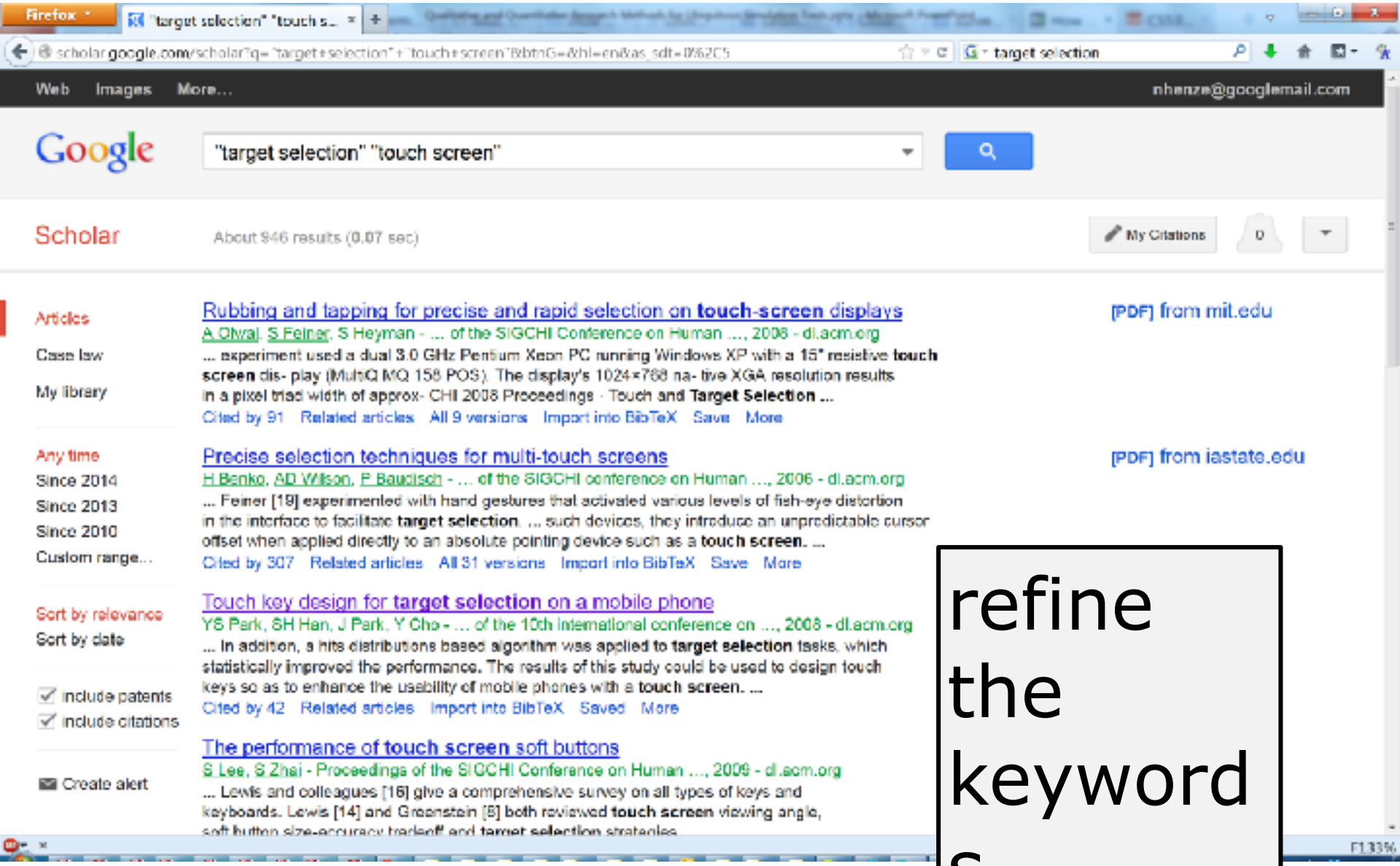
BibDesk: http://bibdesk.sourceforge.net/

Mendeley: http://www.mendeley.com/

Zotero: http://www.zotero.org/



keywords into Google Scholar



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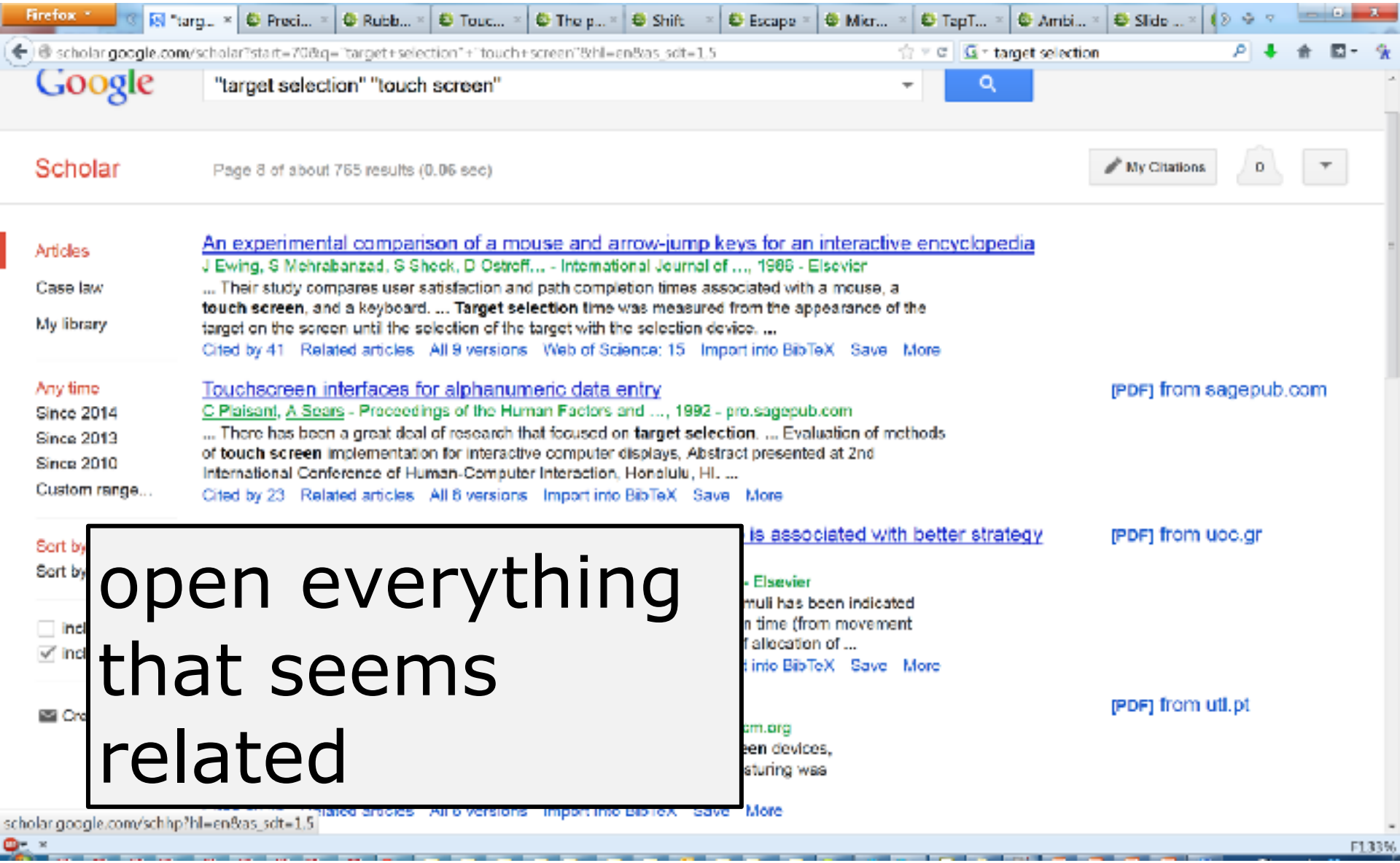

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Escape: A Target Selection Technique Using Visually-cued Gestures

Kiji Yatani[1], Kurt Partridge[2], Marshall Bern[2], and Mark W. Newman[3]

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ABSTRACT

Many mobile devices have touch-sensitive screens that people interact with using fingers or thumbs. However, such interaction is difficult because targets become occluded, and because fingers and thumbs have low input resolution. Several research has addressed occlusion through visual techniques. However, the poor resolution of finger and thumb selection still limits selection speed. In this paper, we address the selection speed problem through a new target selection technique called Escape. In Escape, targets are selected by gestures cued by icon position and appearance. A user study shows that for targets six to twelve pixels wide, Escape performs at a similar error rate and at least 30% faster than Shift, an alternative technique. On a similar task, we evaluate Escape's performance in different circumstances, including different icon sizes, icon overlap, use of color, and gesture direction. We also describe an algorithm that assigns icons to targets, thereby improving Escape's performance.

Author Keywords
Target selection, finger gesture, touch screen, mobile device

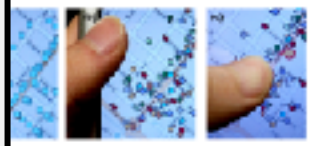
ACM Classification Keywords
H.5.2 [Information Interfaces and Presentation]: User Interfaces – Input devices and strategies, Interaction styles

INTRODUCTION

A recent research study of thumb use recommended that onscreen targets be no smaller than 9.2mm wide [13]. Below this size, performance begins to degrade when the user tries to select a target with a thumb since thumb-presses are simply too large and too variable to give an accurate selection point. Although users can accurately select smaller targets by another method such as by using a stylus, they lose the ease of thumb-based interaction. Furthermore, it is often not practical to make a target large enough for thumb-based interaction because larger targets occupy more space, leaving less room on a small display for other targets and information.

Although users cannot accurately select targets smaller than 9.2mm with direct thumb touch, techniques such as Offset Cursor [15] and the more recent Shift [17] improve selection accuracy by helping users refine their initial selection position. Originally designed for fingertip operation, these techniques overcome the general problem of digit occlusion by offsetting the cursor from the selection point (Offset Cursor), or by displaying an inset of the selection region (Shift).

While these approaches are more accurate for smaller targets, they are also slower. When selecting a 12 pixel (2.6 mm) target with a fingertip, participants using Shift made only about 20% as many errors in normal pointing, but took 50% longer [17].



2: It is difficult to select a target when it is surrounded by selectable objects. (b) The cross in Escape's gestures that disambiguates the selection. (c) It is followed by a gesture (without the release of the finger) by a user to select the target quickly and when it is small or occluded by other objects.

look at everything that still seems related

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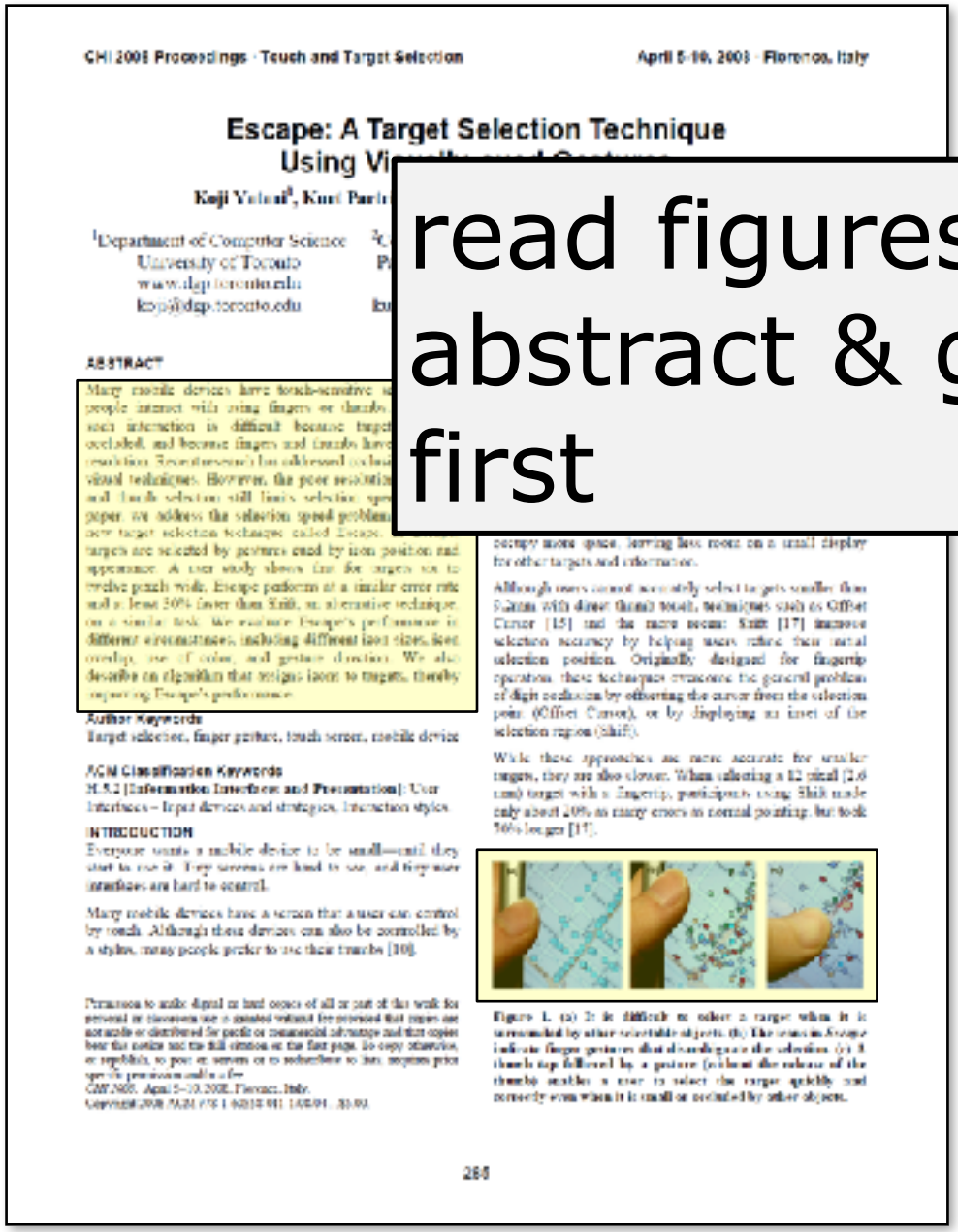

CHI 2008 Proceedings · Touch and Target Selection April 5-10, 2008 · Florence, Italy

Escape: A Target Selection Technique Using Vi

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University of Toronto
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keyi@dgp.toronto.edu

ABSTRACT

Many mobile devices have touch-sensitive s
people interact with using fingers or thumbs
such interaction is difficult because target
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twelve pixels wide, Escape performs at a similar error rate
and at least 30% faster than Shift, an alternative technique,
on a similar task. We evaluate Escape's performance in
different circumstances, including different icon sizes, icon
overlap, use of color, and gesture direction. We also
describe an algorithm that assigns icons to targets, thereby
improving Escape's performance.

Author Keywords
Target selection, finger gesture, touch screen, mobile device

ACM Classification Keywords
H.5.2 [Information Interfaces and Presentation]: User Interfaces – Input devices and strategies, Interaction styles

INTRODUCTION

Everyone wants a mobile device to be small—until they start to use it. Tiny screens are hard to see, and tiny user interfaces are hard to control.

Many mobile devices have a screen that a user can control by touch. Although these devices can also be controlled by a stylus, many people prefer to use their fingers [10].

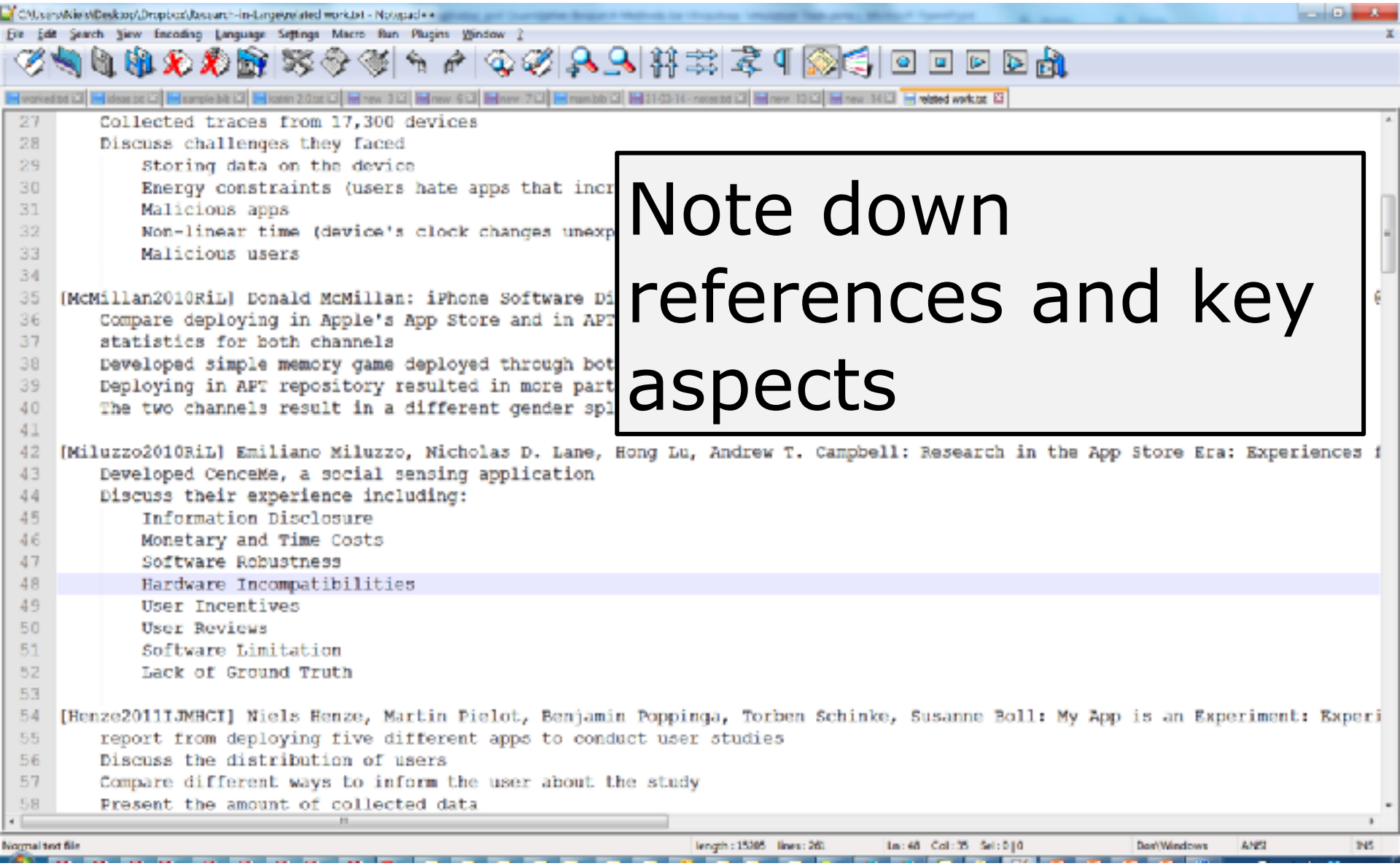
occupy more space, leaving less room on a small display for other targets and information.

Although users cannot accurately select targets smaller than 5.8mm with direct thumb touch, techniques such as Offset Cursor [15] and the more recent Shift [17] improve selection accuracy by helping users refine their initial selection position. Originally designed for fingertip operation, these techniques overcome the general problem of digit occlusion by offsetting the cursor from the selection point (Offset Cursor), or by displaying an inset of the selection region (Shift).

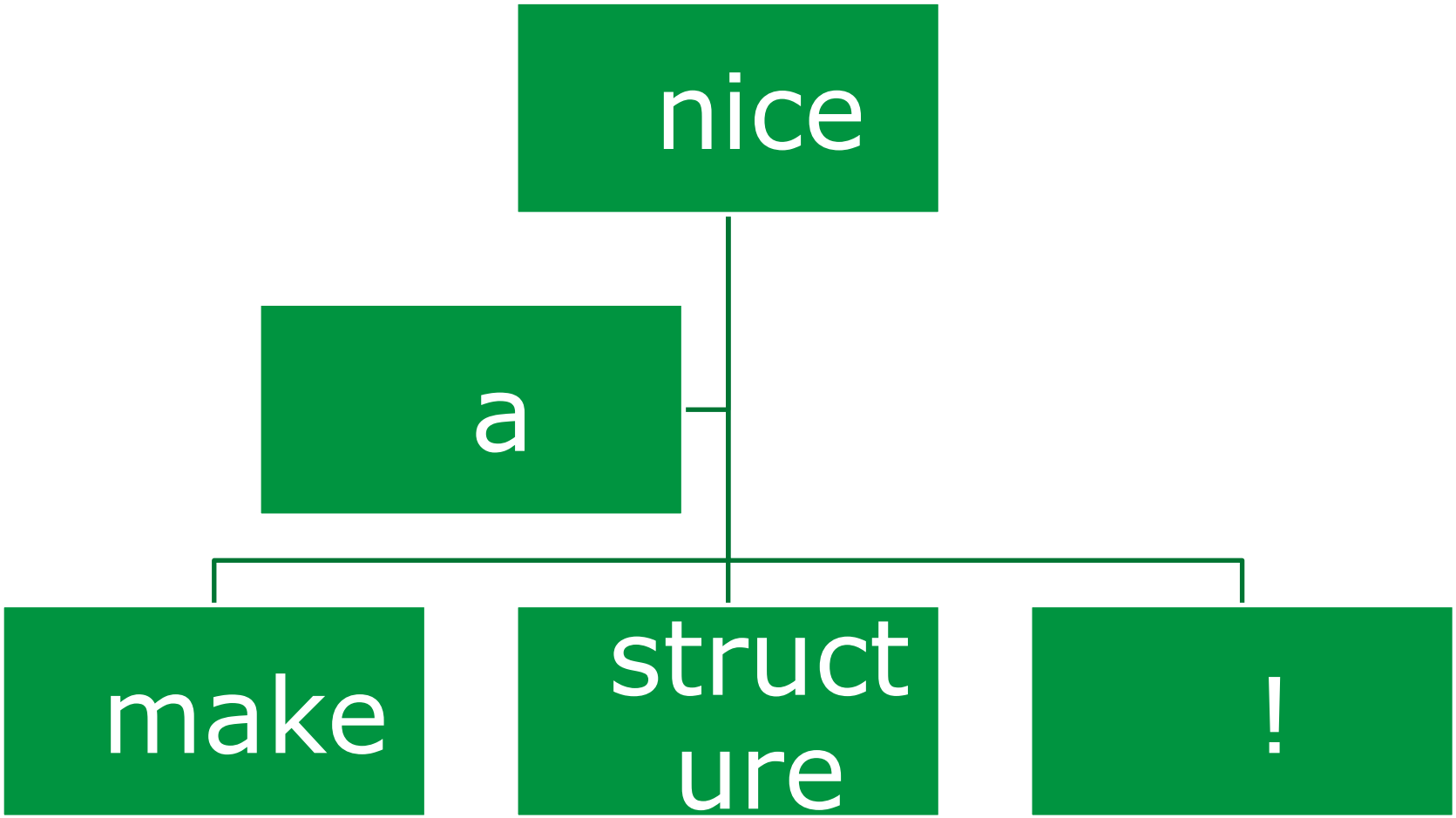
While these approaches are more accurate for smaller targets, they are also slower. When selecting a 12 pixel (2.6 mm) target with a fingertip, participants using Shift made only about 20% as many errors in normal pointing, but took 50% longer [17].

Figure 1. (a) It is difficult to select a target when it is surrounded by other selectable objects. (b) The cross in Escape indicates finger gestures that disambiguate the selection. (c) A thumb tap followed by a gesture (without the release of the thumb) enables a user to select the target quickly and correctly even when it is small or occluded by other objects.

read figures, abstract & graphs first


Note down references and key aspects

Try to find a structure and repeat the process



Example from an introduction

- Brief introduction to the context:

  “Since the introduction of the iPhone, mobile phones with touchscreens began to dominate the smartphone market. Today, all major phone makers have touchscreen devices in their portfolio. In contrast to earlier devices, today’s smartphones are operated by touching the screen with the fingers …”

- Describe the scope

  “…our aim is to observe and manipulate the touch behaviour of a diverse sample, a large number of devices, and various contexts. To collect the required large amount of keystrokes on a virtual keyboard we developed a mobile typing game. To attract a large number of participants …”

- Provide an overview

  “After discussing related work, we describe the game that we developed to collect the data. We provide an overview about the data we collected after publishing the game to the Android Market. Following this, an analysis of the…”

Citations:
Example from a related work section

"**Karlson showed** that regions which are easily to reach with the thumb when considering one-handed interaction achieve the best task performance and lowest perceived difficulty **[7]**. **Karlson concludes** that frequently used buttons should be placed in those regions. **Perry and Hourcade showed** again that targets within easy reach of the thumb can be reached quicker but the accuracy is best when the targets are located on the left, right and top edges of the screen **[14]**. **Park et al. analysed** the success rate, error rate and convenience of 25 regions of a touchscreen when using one-handed thumb input **[13]**. **The authors** also analysed the offset between indicated target and actual touch events. They observed location-specific offsets and discuss the idea of adjusting the location of the touch recognition area to improve the overall performance. "

From: N. Henze, E. Rukzio, and S. Boll: Observational and Experimental Investigation of Typing Behaviour using Virtual Keyboards on Mobile Devices. Proceedings of CHI, 2012.

Ausarbeitung in Englisch

- Abstract
  - Thema und Ergebnis der vorliegenden Arbeit (ca. 150 Worte)
- Einleitung
  - Kontext und Ziele des Forschungsgebiets
  - Gliederung / Vorgehensweise (Fließtext)
- Hauptteil
  - Forschungsgebiet skizzieren
  - Historie darlegen
  - Unterschiedliche Ansätze gegenüberstellen und analysieren (Trends, Stärken und Schwächen, …)
- Zusammenfassung / Diskussion
  - Offene Forschungsfragen
  - Wiederkehrende Probleme, mögliche Lösungsansätze?
  - Kritische Einschätzung
- 6 – 8 Seiten, zweispaltig, kein Bilderbuch, keine „Wall of Text“
- http://research.microsoft.com/en-us/um/people/simonpj/papers/giving-a-talk/writing-a-paper-slides.pdf
- http://www.journal.univagora.ro/download/pdf/425.pdf

Wissenschaftliches Schreiben

- Logisch nachvollziehbarer Aufbau der Arbeit
- Klarer, wertneutraler Sprachstil, so einfach und kurz wie möglich
- Grammatik, Rechtschreibung
- Zahlen von null bis zwölf im Text ausschreiben
- Abkürzungen wie „e.g.“, „i.e.“ ausschreiben
- Vermeiden
  - Ungenaue Mengenangaben („high“, „little“, „almost“, …)
  - Floskeln (z.B. „Based on these and various other findings…“)
  - Füllwörter (z.B. „somewhat“, „indeed“, „remarkably“, …)
  - Tautologien (z.B. „LCD Display“ => LCD = Liquid Crystal Display)
  - Pseudo-Argumente (z.B. „of course“, „as expected“, „without doubt“, …)
  - Unbelegbare Behauptungen (z.B. “This is the best Hauptseminar ever!”)

Aber...

- Wissenschaftliche Arbeiten müssen nicht krampfhaft langweilig sein!
- Gratwanderung! Nicht zu flapsig.
- Zentral:
  - Quellen müssen klar ersichtlich sein
  - Aussagen müssen entweder belegt oder als Annahmen gekennzeichnet werden

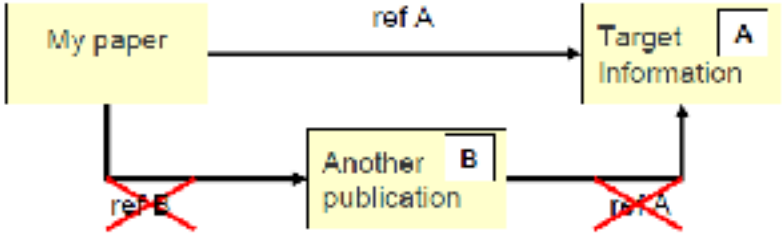
(Sand-Jensen, 2007)

Table 1. Top-10 list of recommendations for writing consistently boring publications.

- Avoid focus
- Avoid originality and personality
- Write l o n g contributions
- Remove implications and speculations
- Leave out illustrations
- Omit necessary steps of reasoning
- Use many abbreviations and terms
- Suppress humor and flowery language
- Degrade biology to statistics
- Quote numerous papers for trivial statements

Zitierweise

- Plagiate
  - Übernahme von Texten immer als direktes (wörtlich) oder indirektes (sinngemäß) Zitat kennzeichnen
  - Nichtbeachtung gilt als Täuschungsversuch
  - http://www.medien.ifi.lmu.de/lehre/Plagiate-Ifl.pdf
- Direktes Zitat mit Anführungsstrichen
- Sekundärzitate vermeiden



- Zitierweise mit der LaTeX Vorlage automatisch festgelegt
- Internet-Quellen immer mit Autor und Datum des letzten Zugriffs angeben
- Wikipedia: gut für allgemeines Verständnis, aber nicht zitierfähig!

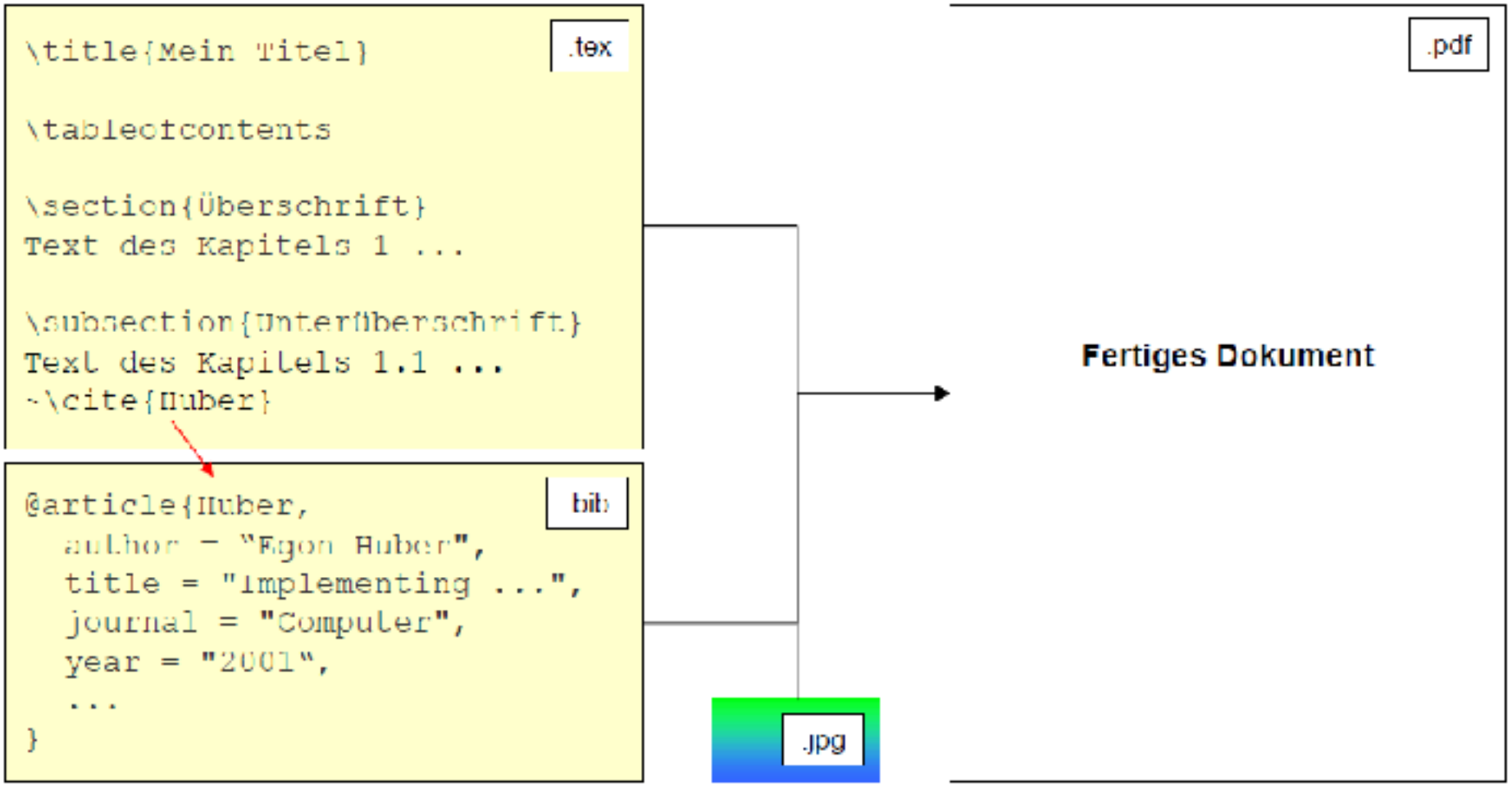
Formatierung

- Größtenteils automatisch
  - über LaTeX und CLS-Datei
- Kein Kapitel 1.1 wenn es nicht auch ein Kapitel 1.2 gibt
- Keine Section-Überschrift über 2 Zeilen
- Paragraphen
  - werden durch eine Leerzeile in der TEX Datei getrennt
  - keine manuellen Umbrüche
- Möglichst wenig Fußnoten
- Referenzen
  - alle Abbildungen, Tabellen müssen im Text referenziert sein
  - die im Literaturverzeichnis angegebenen Quellen müssen im Text referenziert sein
- Abgabe der Endfassung: LaTeX Source + pdf-Datei
  - komplette LaTeX-Source (.tex, .bib, Abbildungen, …) und pdf in einem zip-Archiv

LaTeX

- Weiterentwicklung des Textsatzprogramms TeX, einfachere Benutzung
- Kein WYSIWYG
- Prinzip: Trennung von Inhalt und Gestaltung
  - Autor kümmert sich ausschließlich um den Inhalt
  - Gestaltung durch Einbindung von Formatierungsklassen
- Standard für wissenschaftliche Publikationen
- Vorteile
  - Automatische Generierung von Gliederung, Abbildungsverzeichnissen, Index, Bibliographien, etc.
  - Einfache Formatierung von mathematischen Formeln
  - Einfache Verwaltung / Einbindung von Literaturhinweisen
- Nachteile
  - Am Anfang gewöhnungsbedürftig
  - Positionierung von Grafiken teils umständlich

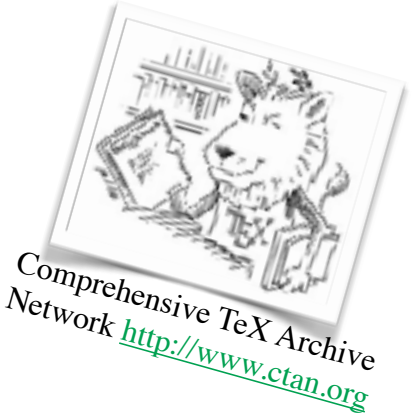
Erstellung eines Dokuments



Vorgehensweise

- TeX Implementierung und LaTeX GUIs / IDE installieren:
  - Windows OS:
    - MikTeX (http://www.miktex.org) + TeXnicCenter (http://www.texniccenter.org/)
    - siehe auch Installation mit ProText (http://www.tug.org/protext)
  - Max OS:
    - MacTex (http://www.tug.org/mactex) mit TeXShop IDE (http://www.uoregon.edu/~koch/texshop/index.html)
    - TexMaker (http://www.xm1math.net/texmaker/)
  - Linux:
    - teTeX package (http://www.ctan.org) + Kile (http://kile.sourceforge.net)
    - vorinstalliert im CIP-Pool
- Download Hauptseminar LaTeX-Template
  - TEX und BIB Dateien mit IDE öffnen, Source anschauen und nachvollziehen
  - LaTeX => PDF einstellen, TEX Datei zweimal kompilieren
  - PDF bewundern
  - Text mit eigener Arbeit ersetzen
  - Bei Bedarf weitere LaTeX-Tutorials konsultieren

LaTeX-Resourcen



- LaTeX Klassen und Dokumentationen
  - (Not So) Short Guide 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 LaTeX Kurzbeschreibung
  - http://latex.tugraz.at/_media/docs/l2kurz.pdf
- Deutschsprachige FAQs
  - http://www.dante.de/faq/de-tex-faq/html/de-tex-faq.html
- BibTeX–Tool und Dateiformat zur Verwaltung und Einbindung von Bibliographien
  - Fachliteratur-Referenzen werden online vielfach im BibTeXFormat angeboten (z.B. ACM, IEEE)
  - How-To: http://www.bibtex.org/Using/de

BIBTEX

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Fragen zur Organisation?

Schedule

Termin	Veranstaltung / Abgabetermin
24.10.17	Vorstellung und Themenvergabe
21.11.17	Abgabe: Ausarbeitung 1. Fassung
24.11.17	Abgabe: Folie 60-Sekunden-Vortrag
28.11.17	60-Sekunden-Vorträge (Beginn s.t.!) / Wie schreibt man Reviews?
03.12.17	Abgabe: Ausarbeitung 2. Fassung (für Review)
15.12.17	Abgabe: Reviews
19.12.17	Verteilung Reviews & Feedback
30.01.18	Abgabe: Ausarbeitung 3. Fassung (final)
06.02.18	Abgabe: vorläufige Folien
07-14.02.18	Probevorträge
15.02.18	Abgabe: finale Version der Vortragsfolien
19.02.18	Präsentationstag 1 (muss noch bestätigt werden)
20.02.18	Präsentationstag 2 (muss noch bestätigt werden)

Abgabetermine

Termine mit Anwesenheitspflicht

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60-Sekunden-Vorträge

60-Sekunden-Vorträge

- Bewertungskriterien
  - Inhalt
  - Folie
  - Stil