LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

Interacting with Computers

Daniel Ullrich | Bastian Pfleging

Hauptseminar Medieninformatik | München | 2016-10-25

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. Heinrich Hußmann

- Betreuer:
  Dr. Daniel Ullrich, daniel.ullrich@ifi.lmu.de
  Dipl.-Inf. Bastian Pfleging, bastian.pfleging@ifi.lmu.de

Organisatorisches (2)

- Präsenztermine: ausgewählte Termine, Dienstag 16:00-18:00 Uhr
- Verschiedene Abgaben lt. Zeitplan
- Vorträge am Ende der Vorlesungszeit, geplant für 20. & 21.02.2017, ganztägig
- 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
25.10.16	Vorstellung und Themenvergabe
15.11.16	Abgabe: Vorläufige Ausarbeitung / kommentierte Gliederung
18.11.16	Abgabe: Folien 90-Sekunden-Vortrag
22.11.16	90-Sekunden-Vorträge (Beginn s.t.!)
29.11.16	Wie schreibt man Reviews?
04.12.16	Abgabe: Ausarbeitung zum Review
13.12.16	Abgabe: Reviews
20.12.16	Verteilung Reviews & Feedback
31.01.17	Abgabe: finale Ausarbeitung
07.02.17	Abgabe: vorläufige Folien
08-15.02.17	Probevorträge
16.02.17	Abgabe: finale Version der Vortragsfolien
20.02.17	Präsentationstag 1 (muss noch bestätigt werden)
21.02.17	Präsentationstag 2 (muss noch bestätigt werden)

Abgabetermine | Termine mit Anwesenheitspflicht

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Interacting with Computers

Research topics

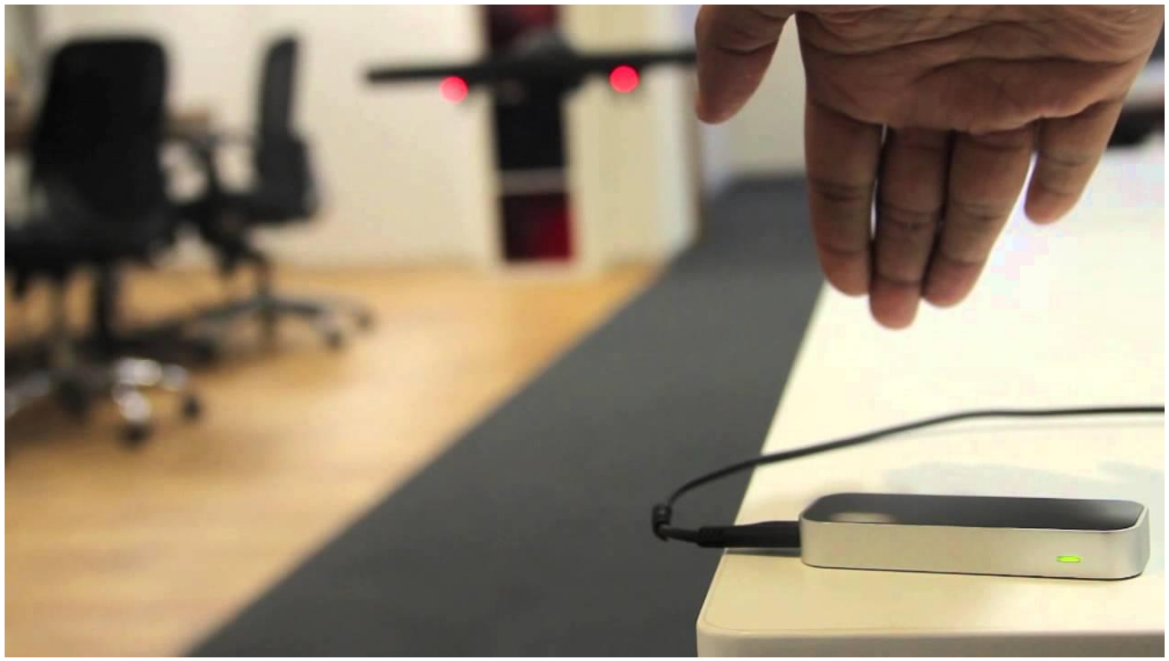
#01 - Modalities in Camera Control

Short Description:

Exploring *gaze*, mid-air *gestures* and *pen-based* interaction

References:

- starter papers and contact: axel.hoesl@ifi.lmu.de



Supervisor: Axel Hösl

#02 - VR – Multimodal interactions and their effect on the perception of trust in social situations.

Short Description:

Certain modes of interactions may be more appropriate for social interactions than others and hence have an influence on the perception of trust. What modes of interactions currently exist for VR (virtual reality) environments that can be used for social interactions? Identify the gaps and how they can be overcome based on previous research.

References:

- Nijholt, Anton, and Joris Hulstijn. "Multimodal interactions with agents in virtual worlds." *Future Directions for Intelligent Systems and Information Sciences*. Physica-Verlag HD, 2000. 148-173.
- Roel Vertegaal, Robert Slagter, Gerrit van der Veer, and Anton Nijholt. 2001. Eye gaze patterns in conversations: there is more to conversational agents than meets the eyes. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI '01). ACM, New York, NY, USA, 301-308.Kristoffersson, A.,
- Riedl, René, et al. "Trusting humans and avatars: A brain imaging study based on evolution theory." *Journal of Management Information Systems* 30.4 (2014): 83-114.

Supervisor: Ceenu George

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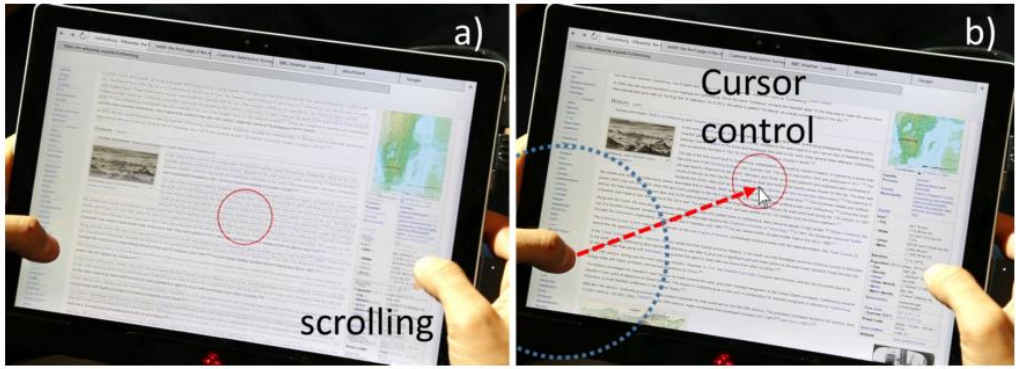
#03 - Touch & Co – Augmenting touch input with further modalities

- Review interaction techniques that combine touch input with other modalities
- What value does the other modality add? Which problems (of touch) does it address? Which new challenges arise?

e.g. touch & gaze:



e.g. touch & tilt:

Hinckley, K., & Song, H. (2011). Sensor Synaesthesia: Touch in Motion, and Motion in Touch. In *CHI 2011* (pp. 801–810). http://doi.org/10.1145/1978942.1979059

Pfeuffer, K., & Gellersen, H. (2016). Gaze and Touch Interaction on Tablets. In *UIST 2016* (pp. 301–311). http://doi.org/10.1145/2984511.2984514

Wilkinson, G., Kharrufa, A., Hook, J., Pursglove, B., Wood, G., Haeuser, H., … Olivier, P. (2016). Expressy: Using a Wrist-worn Inertial Measurement Unit to Add Expressiveness to Touch-based Interactions. In *CHI 16*. http://doi.org/10.1145/2858036.2858223

Supervisor: Daniel Buschek

#04 - History and Future Directions - Personalizing User Interfaces

Short Description:

We are all different. We have, for example, different expectations, preferences, motives, skills, capabilities, and learning styles, to name only a few individual differences (Browne, 2016). However, most of the devices and technologies that we use tend to ignore these individual differences. In this paper you will review existing literature to understand (1) what technology can adapt to (2) how it can adapt and *optionally* (3) the design process used to design adaptive systems.

References:

- Browne, D. (2016). Adaptive user interfaces. Elsevier.
- Cortes, V. A., Zirate, V. H., Uresti, J. A. R., & Zayas, B. E. (2009). Current Challenges and Applications for Adaptive User Interfaces.
- Fan, H., & Poole, M. S. (2006). What is personalization? Perspectives on the design and implementation of personalization in information systems. Journal of Organizational Computing and Electronic Commerce, 16(3-4), 179-202.
- Yang, Q., Zimmerman, J., Steinfeld, A., & Tomasic, A. (2016, June). Planning Adaptive Mobile Experiences When Wireframing. In Proceedings of the 2016 ACM Conference on Designing Interactive Systems (pp. 565-576). ACM.

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Supervisor: Hanna Schneider

#05 - Quantifying Privacy

Short Description:

Privacy is a topic concerning many online and app users. However, privacy is difficult to study because of its complexity and context-dependency. In many cases, privacy has therefore been investigated in a *qualitative* way through interviews or questionnaires.
Can privacy be *quantified*, and if so, how? Which metrics can we use to measure privacy?

References:

- Acquisti, Alessandro, John, Leslie and Loewenstein, George. "*What is privacy worth." Workshop on Information Systems and Economics (WISE)*. 2009.
- Preibusch, Sören. *"Guide to measuring privacy concern: Review of survey and observational instruments." International Journal of Human-Computer Studies* 71.12 (2013): 1133-1143.
- Smith, H. Jeff, Tamara Dinev, and Heng Xu. *"Information privacy research: an interdisciplinary review." MIS quarterly* 35.4 (2011): 989-1016.

Supervisor: Malin Eiband

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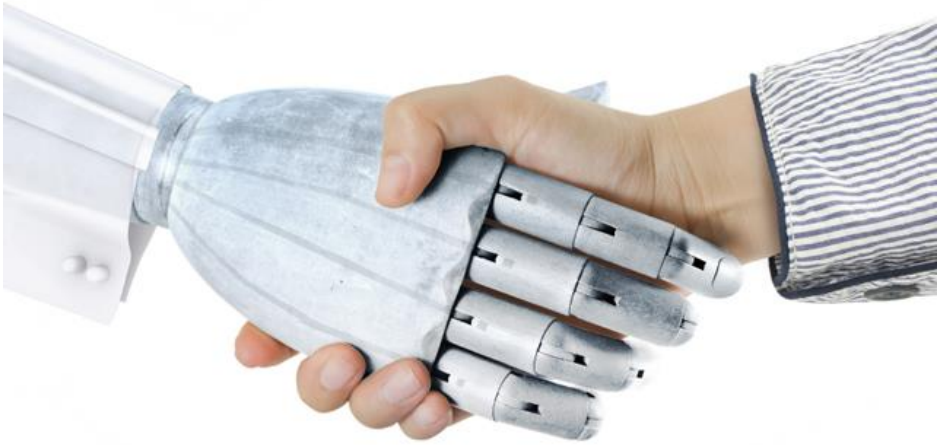
#06 – Over- and Under-Trust in intelligent system interaction

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

#07 - Multimodal interactions in TEL

Short Description:

- Would you like to learn more about **multimodal interaction design for technology enhanced learning settings?**

- Look deeper into Multimodal Literacies and Technology
- Experiment with use case scenarios for future tel settings

References:

- For more info contact : Maria.Fysaraki@ifi.lmu.de

Supervisor: Maria Fysaraki

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#08 - Interacting with Moving Objects

- Interacting with moving controls using gaze:

  https://perceptual.mpi-inf.mpg.de/files/2013/10/vidal13_ubicomp.pdf

- Interacting with animated controls using mid-air gestures:

  http://www.socialnui.unimelb.edu.au/publications/2016-SocialNUI-Clarke.pdf

- Imitating Elliptical motions using the mouse:

  http://www.umiacs.umd.edu/~elm/projects/motionpointing/motionpointing.pdf

- Questions: what are the pros and cons of each modality? What are the use cases?

#09 – Multimodal interaction: Gaze + Mid-air Gestures

References

- http://www.academia.edu/download/40837345/p167-carter.pdf
- http://chrisharrison.net/projects/gazegesture/GazePlusGesture.pdf
- http://www.dgp.toronto.edu/~ravin/papers/uist2005_distantpointing.pdf
- http://www.lancaster.ac.uk/staff/alexandj/pdf/INTERACT15_GazeMidAirGestures.pdf

#10 – Multimodal interaction: Gaze + Touch

References

- http://www.lancaster.ac.uk/staff/alexandj/pdf/UIST14_GazeTouch.pdf
- http://www.lancaster.ac.uk/staff/alexandj/pdf/INTERACT15_GazeTouchTradeOff.pdf
- http://www.lancaster.ac.uk/staff/alexandj/pdf/CHI15_GazeRST.pdf
- https://imld.de/cnt/uploads/2013/07/2013-CHI-StillLooking.pdf

#11 - Multimodal Authentication

Short Description:

Passwords are not the only way to authenticate users. Implicit authentication using multimodal biometric cues has started to gain momentum. For example Coursera authenticates users with keystroke dynamics and Google aims to combine a large number of behavioral biometric cues for authentication.

For this topic, you should provide an overview of authentication methods beyond passwords and summarize their advantages and disadvantages. Categorize them by modality and provide an assessment what might work best for the (mobile) web, apps, and computers.

References:

- Andrew Maas, Chris Heather, Chuong Do, Relly Brandman, Daphne Koller, and Andrew Ng. 2014. MOOCs and technology to advance learning and learning research. *Ubiquity* 2014, May: 1–11. http://doi.org/10.1145/2591684
- Alexander De Luca, Alina Hang, Frederik Brudy, Christian Lindner, and Heinrich Hussmann. 2012. Touch me once and I know it's you! Implicit authentication based on touch screen patterns. *CHI 2012*: 987–996. http://doi.org/10.1145/2208516.2208544
- Joseph Bonneau, Cormac Herley, Paul C. Van Oorschot, and Frank Stajano. 2015. Passwords and the Evolution of Imperfect Authentication. *Communications of the ACM* 58, 7: 78–87. http://doi.org/10.1145/2699390
- Joseph Bonneau, Cormac Herley, Paul C. Van Oorschot, and Frank Stajano. 2012. The Quest to Replace Passwords: A Framework for Comparative Evaluation of Web Authentication Schemes. *Proceedings - IEEE Symposium on Security and Privacy*: 553–567. http://doi.org/10.1109/SP.2012.44

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Supervisor: Tobias Seitz

#12 - Understanding the User's Workload

Short Description:

Understanding the user's workload is helpful for instance to adapt the interface according to the current situation. For this topic, the goal is to identify the state-of-art regarding measuring workload and adapting the interface.

References:

- Shamsi T. Iqbal, Xianjun Sam Zheng, and Brian P. Bailey. 2004. Task-evoked pupillary response to mental workload in human-computer interaction. In *CHI '04 Extended Abstracts on Human Factors in Computing Systems* (CHI EA '04). ACM, New York, NY, USA, 1477-1480. DOI: 10.1145/985921.986094
- Young, Mark S., et al. "State of science: mental workload in ergonomics." *Ergonomics* 58.1 (2015): 1-17. DOI: 10.1080/00140139.2014.956151
- Erin T. Solovey, Marin Zec, Enrique Abdon Garcia Perez, Bryan Reimer, and Bruce Mehler. 2014. Classifying driver workload using physiological and driving performance data: two field studies. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI '14). ACM, New York, NY, USA, 4057-4066. DOI: 10.1145/2556288.2557068

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Supervisor: Bastian Pfleging

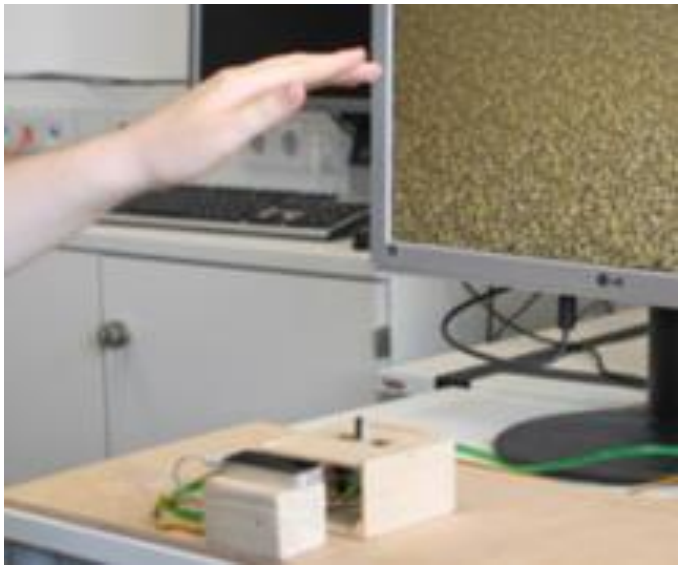
#13 - Aerotactile Feedback

Short Description:

Extending tactile feedback for situations where we do not touch or hold an interactive device.

References:

- Jaeyeon Lee and Geehyuk Lee. 2016. Designing a Non-contact Wearable Tactile Display Using Airflows. In *Proceedings of the 29th Annual Symposium on User Interface Software and Technology* (UIST '16). ACM, New York, NY, USA, 183-194. DOI: 10.1145/2984511.2984583
- Rajinder Sodhi, Ivan Poupyrev, Matthew Glisson, and Ali Israr. 2013. AIREAL: interactive tactile experiences in free air. *ACM Trans. Graph.* 32, 4, Article 134 (July 2013), 10 pages. DOI: 10.1145/2461912.2462007
- Bernhagen, M., Trezl, J., Hertwig, D. & Dittrich, F., (2016). Umsetzung einer natürlichen Interaktion mittels Head-Mounted-Display unter Einbezug von taktilen Rückmeldungen. In: Weyers, B. & Dittmar, A. (Hrsg.), Mensch und Computer 2016 – Workshopband. Aachen: GI



#14 - Speech Interaction in the Car

Short Description:

Entering the address while driving could be as easy as just saying the address.
However, speech interaction in the car is still difficult and not used that often in the car.

References:

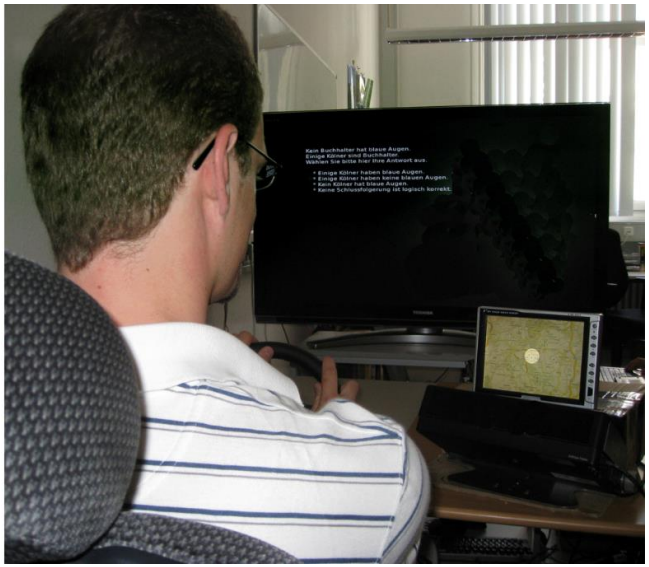
- TBA

Supervisor: Bastian Pfleging

#15 - Gaze-Interaction in the Car

Short Description:

Driving is a mostly visual task. Hence, it is important at what the driver looks at. Yet, the driver‘s gaze could be used to automatically control or consciously interact with in-car functions and thereby decrease distraction.



References:

- Dagmar Kern, Paul Marshall, and Albrecht Schmidt. 2010. Gazemarks: gaze-based visual placeholders to ease attention switching. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI '10). ACM, New York, NY, USA, 2093-2102. DOI: 10.1145/1753326.1753646
- More references to follow

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Supervisor: Renate Häuslschmid

Topics

#	Topic	Supervisor	Student 1	Student 2
1	Modalities in Camera Control	Axel	Thomas S.	
2	VR – Multimodal interactions and their effect on the perception of trust in social situations.	Ceenu	Tim	Tobias
3	Touch & Co – Augmenting touch input with further modalities	Daniel B	Mathis G.	
4	History and Future Directions - Personalizing User Interfaces	Hanna	Maria	Markus
5	Quantifying Privacy	Malin	Arnold S.	
6	Over- and Under-Trust in intelligent system interaction	Daniel U	Eugenia	Felix
7	Multimodal interactions in TEL	Maria	Markus Z.	Mingyang
8	Interacting with Moving Objects	Mohammed		-

Topics

#	Topic	Supervisor	Student 1	Student 2
9	Multimodal interaction: Gaze + Mid-air Gestures	Mohammed	Larissa	–
10	Multimodal interaction: Gaze + Touch	Mohammed		–
11	Multimodal Authentication	Tobias	Alexander	Lisa
12	Understanding the User's Workload	Bastian	Martin H.	–
13	Aerotactile Feedback	Bastian	Linh N.	–
14	Speech Interaction in the Car	Bastian	Martin C.	–
15	Gaze-Interaction in the Car	Renate	Stina	

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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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- Talks and lectures
- 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/

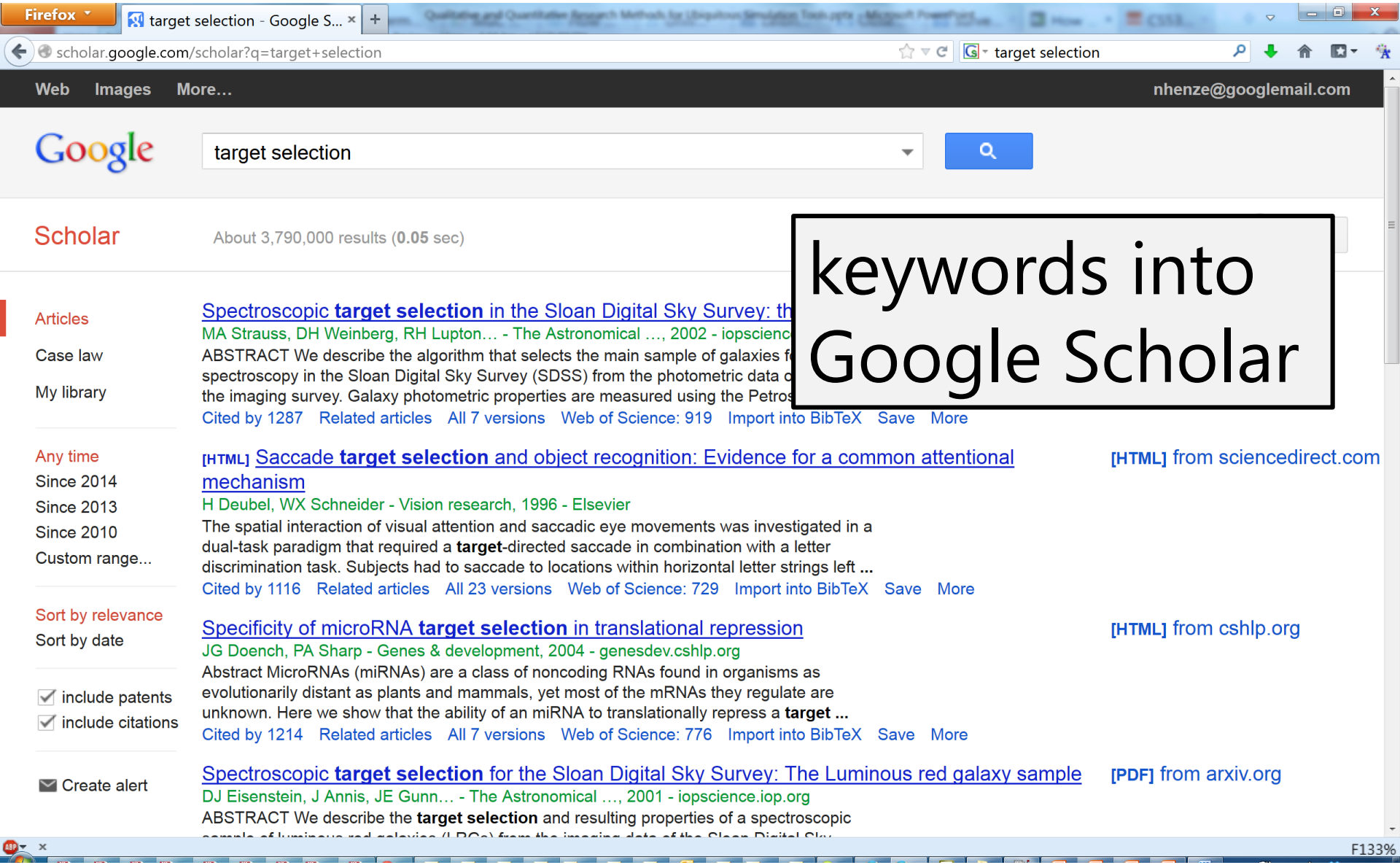
Hint: (Open source) software to manage references:

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

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

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

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



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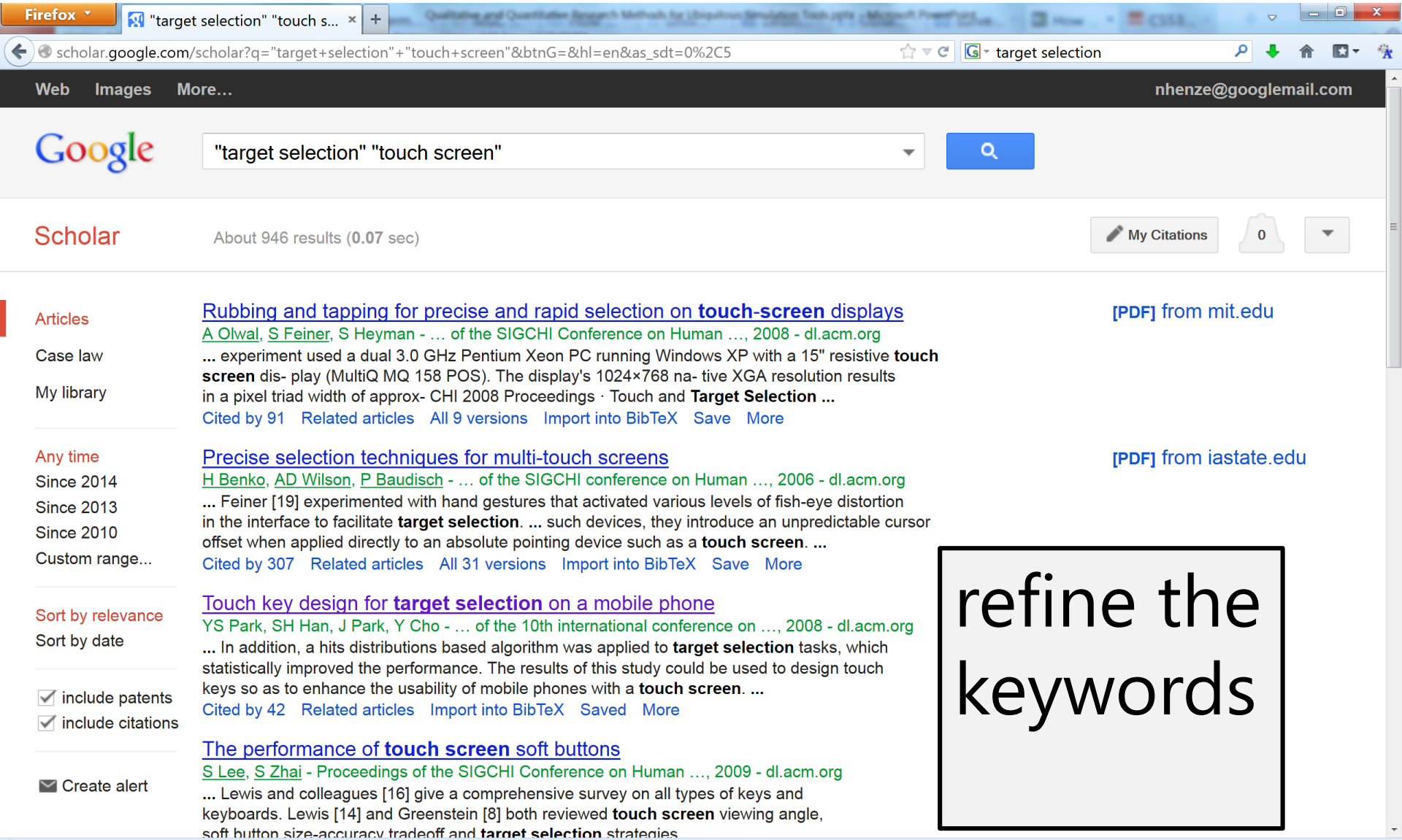

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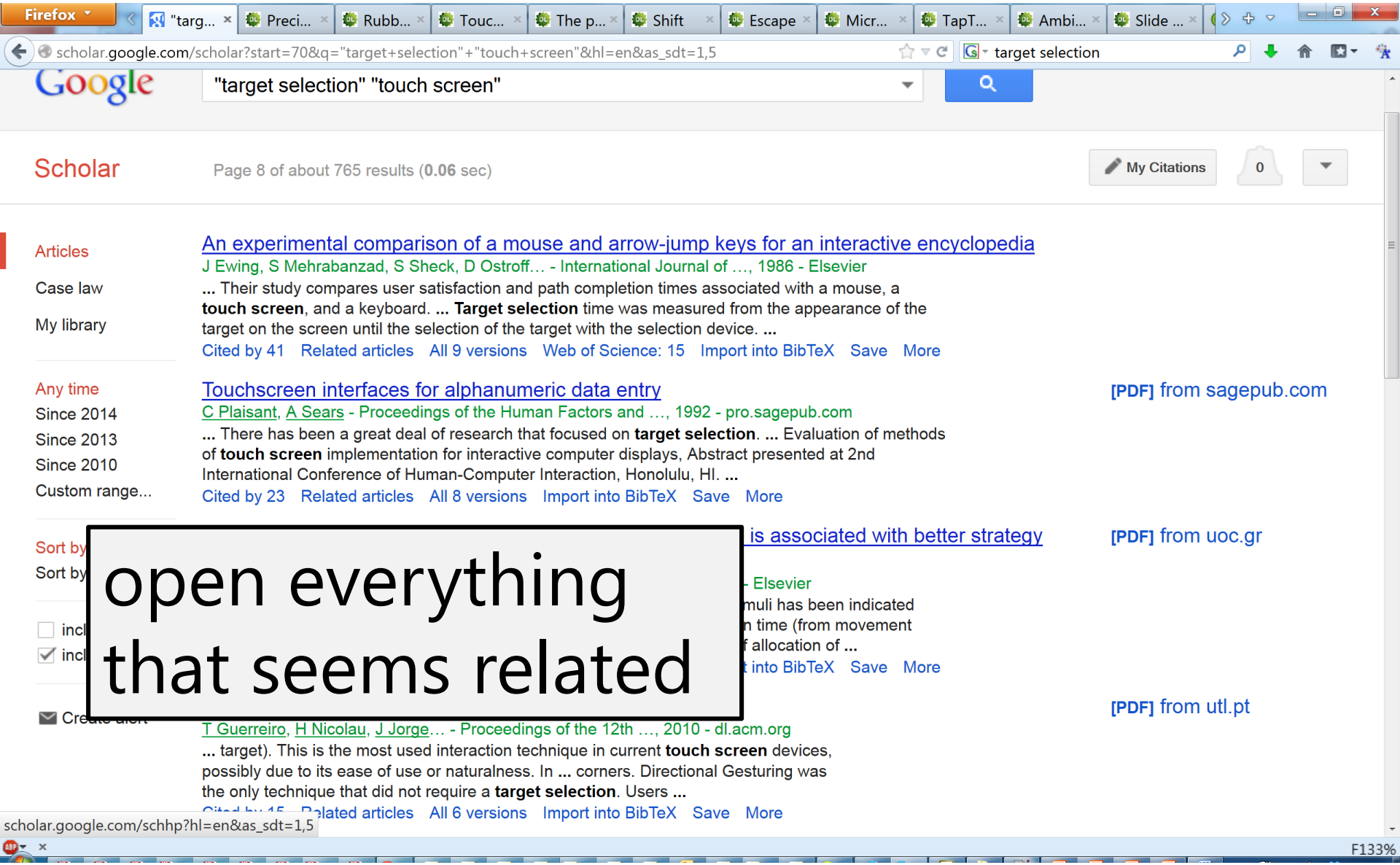

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Escape: A Target Selection Technique Using Visually-cued Gestures

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

[1]Department of Computer Science
University of Toronto
www.dgp.toronto.edu
koji@dgp.toronto.edu

[2]Computing Sciences Laboratory
Palo Alto Research Center, Inc.
www.parc.com
kurt@parc.com, bern@parc.com

[3]School of Information
University of Michigan
www.si.umich.edu
mnewman@umich.edu

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. Recent 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

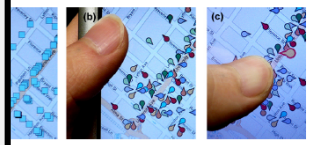
ACM Classification Keywords
H.5.2 [**Information Interfaces and Presentation**]: User Interfaces – Input devices and strategies, Interaction styles.

INTRODUCTION

A recent research study of thumb use recommended that on-screen 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 as normal pointing, but took 70% longer [17].



It is difficult to select a target when it is other selectable objects. (b) The icons in *Escape* gestures that disambiguate the selection. (c) A llowed by a gesture (without the release of the les a user to select the target quickly and when it is small or occluded by other objects.

look at everything that still seems related

Escape: A Target Selection Technique Using Vi

Koji Yatani[1], Kurt Partr

[1]Department of Computer Science [2]C
University of Toronto P
www.dgp.toronto.edu
koji@dgp.toronto.edu ku

read figures, abstract & graphs first

ABSTRACT

Many mobile devices have touch-sensitive s
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such interaction is difficult because targets become occluded, and because fingers and thumbs have low input resolution. Recent 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

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 thumbs [10].

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 as normal pointing, but took 70% longer [17].

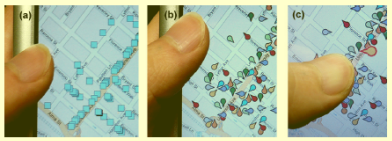
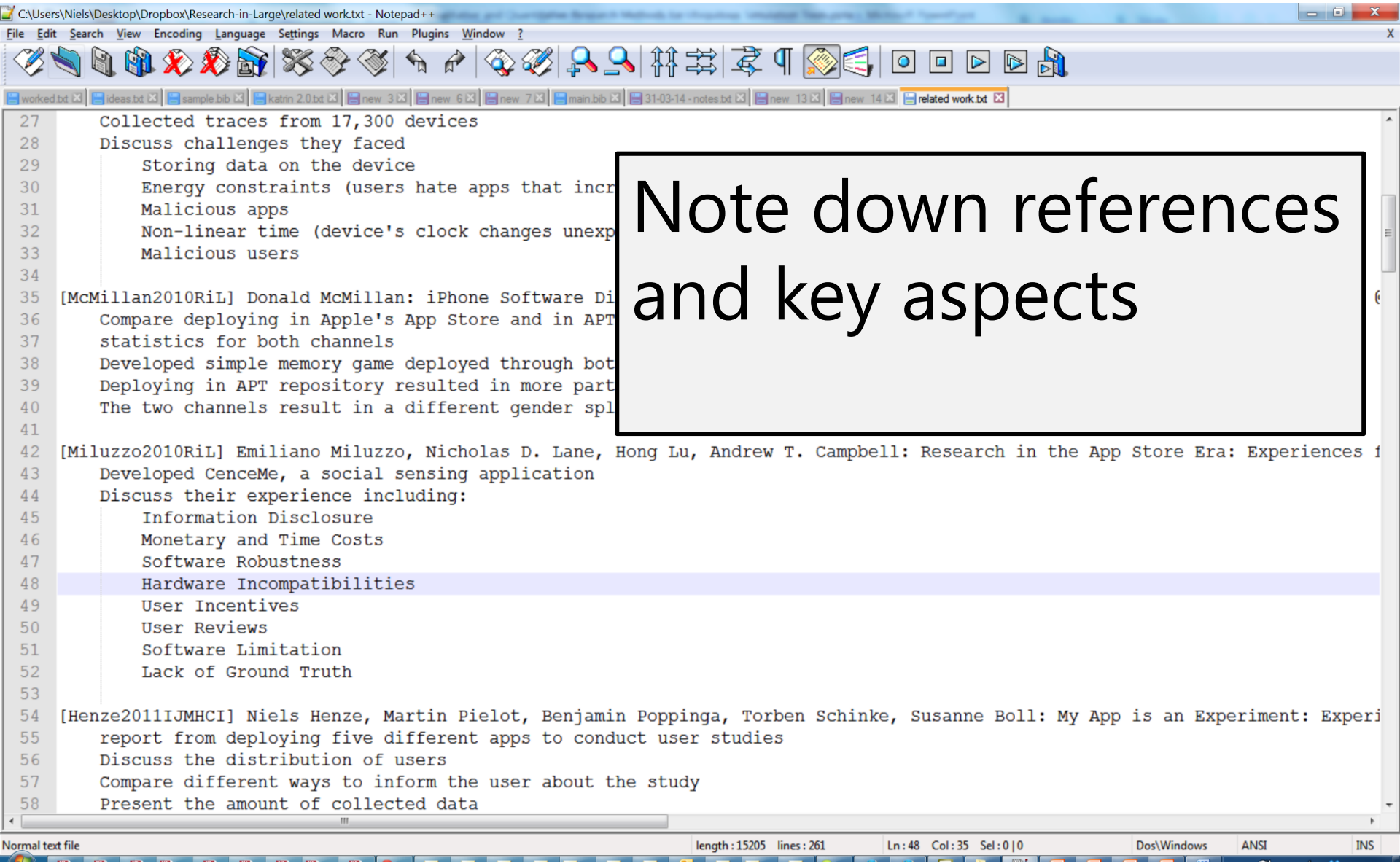


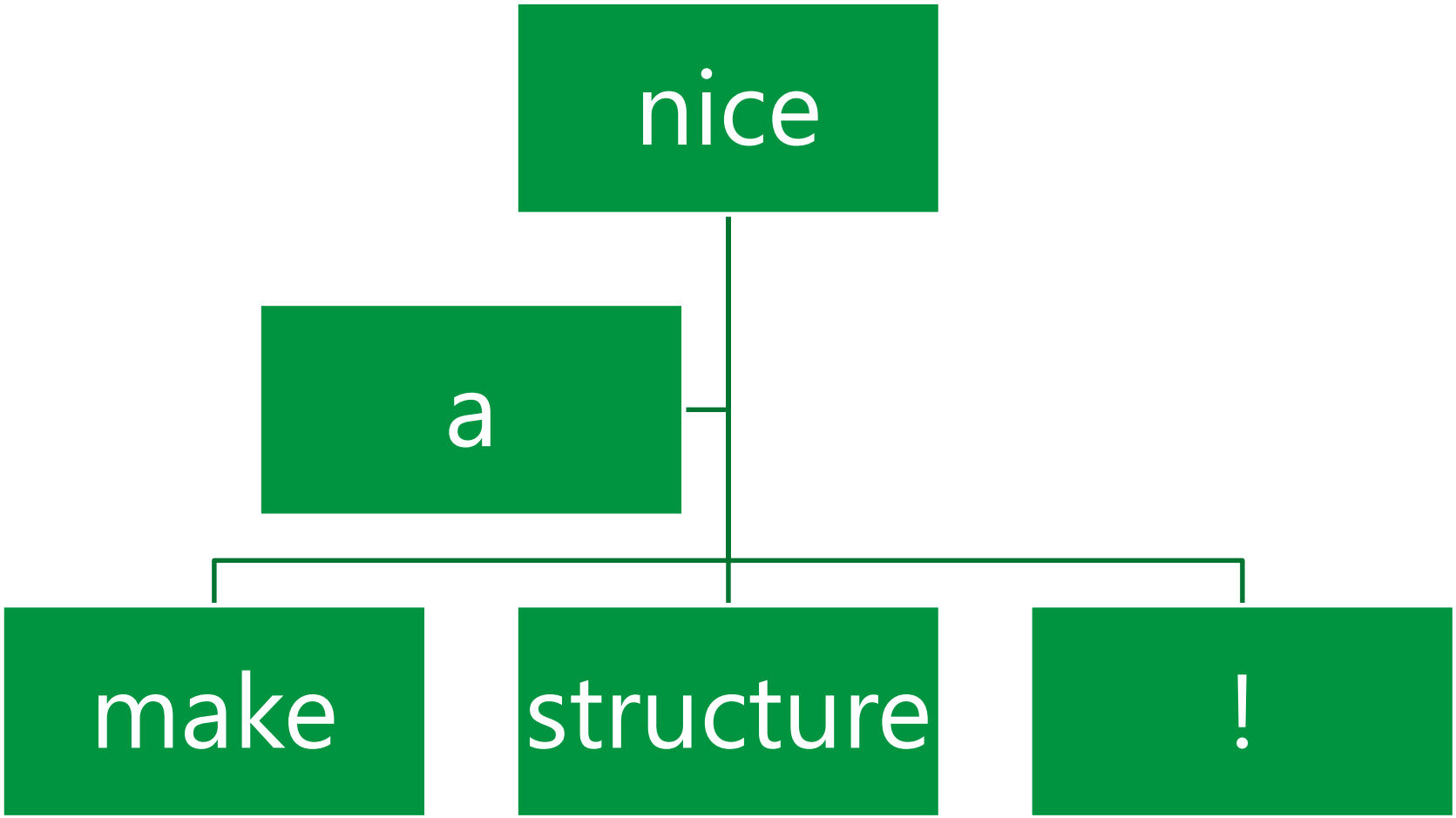
Figure 1. (a) It is difficult to select a target when it is surrounded by other selectable objects. (b) The icons in *Escape* indicate finger gestures that disambiguate the selection. (c) A thumb tap followed by a gesture (without the release of the thumb) enables a user to select the target quickly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

CHI 2008, April 5–10, 2008, Florence, Italy.



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

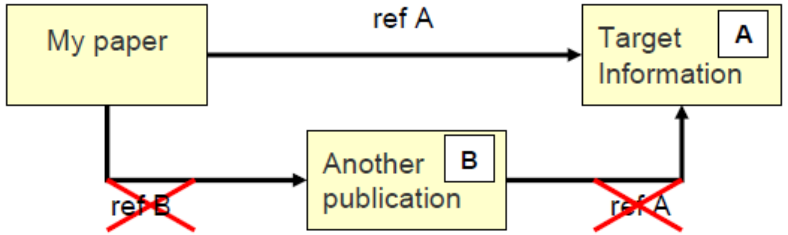
(Sand-Jensen, 2007)

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-IfI.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!

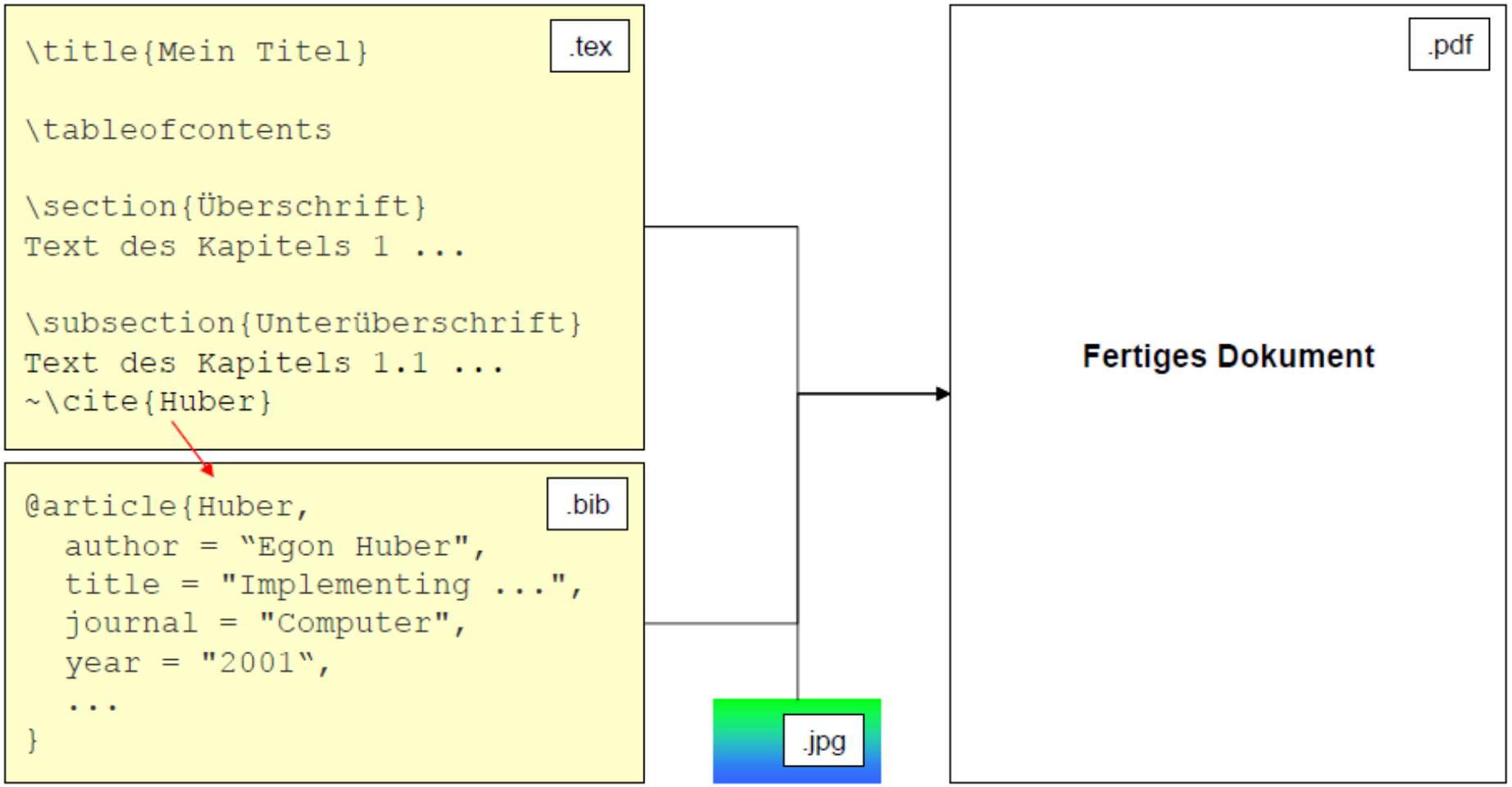
Formatierung

- 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

LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

Fragen zur Organisation?

Schedule

Termin	Veranstaltung / Abgabetermin
25.10.16	Vorstellung und Themenvergabe
15.11.16	Abgabe: Vorläufige Ausarbeitung / kommentierte Gliederung
18.11.16	Abgabe: Folien 90-Sekunden-Vortrag
22.11.16	90-Sekunden-Vorträge (Beginn s.t.!)
29.11.16	Wie schreibt man Reviews?
04.12.16	Abgabe: Ausarbeitung zum Review
13.12.16	Abgabe: Reviews
20.12.16	Verteilung Reviews & Feedback
31.01.17	Abgabe: finale Ausarbeitung
07.02.17	Abgabe: vorläufige Folien
08-15.02.17	Probevorträge
16.02.17	Abgabe: finale Version der Vortragsfolien
20.02.17	Präsentationstag 1 (muss noch bestätigt werden)
21.02.17	Präsentationstag 2 (muss noch bestätigt werden)

Abgabetermine | Termine mit Anwesenheitspflicht