



Fachgebiet Quality and Usability Lab

Prof. Dr.-Ing. Sebastian Möller

Quality and Usability Lab

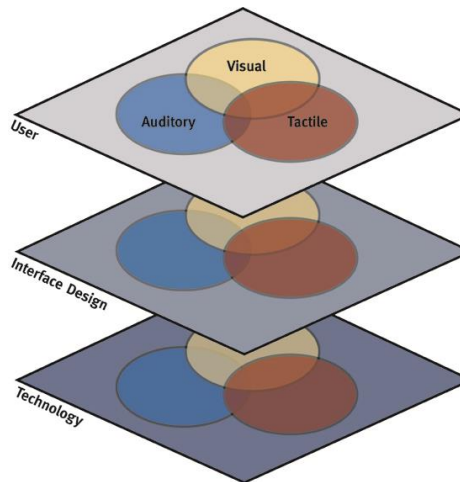
Aims and approach

Goal

Explore future technology and human perception to design quality interactions.

Approach

Comprehensive usability design requires taking viewpoints on three layers.



User

Measuring and modelling usability and perceptual quality

Interface design

Designing the communication interface between user and system

Technology

Multimedia analysis, synthesis and compression

Quality and Usability Lab

Project Groups

Quality

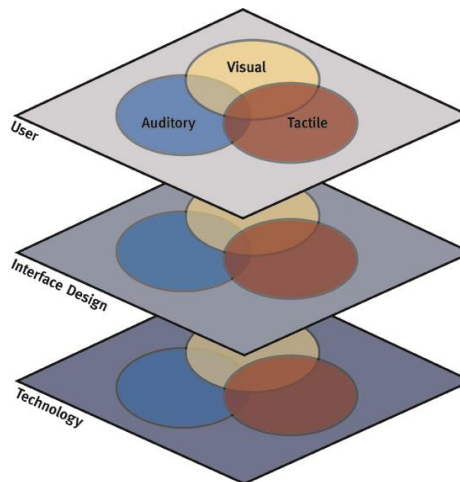
Perception, judgment and prediction of auditory, visual and tactile signals

User Experience

Design, analyze and simplify Usability and User Experience evaluation

Speech

Speech processing, voice perception, and spoken human-computer interaction



Audio and Augmented Reality

Audio, acoustics, and auditory and visual augmented reality

Next Generation Crowdsourcing

Mobile, real-time, secure and confidential crowdsourcing on our Crowdee platform

Usable Security and Privacy

Evaluating and modelling the user behaviour with respect to security and privacy related IT-systems

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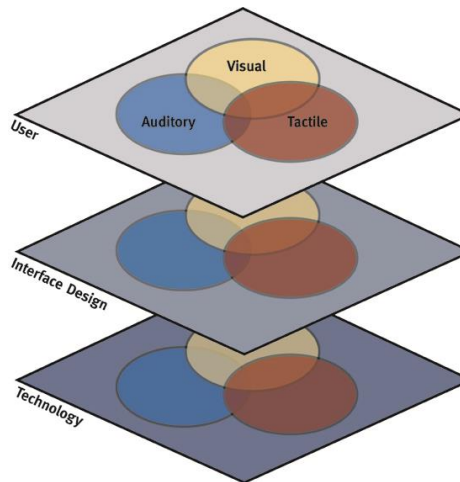
Team

Quality

- Sebastian Möller
- Jan-Niklas Voigt-Antons
- Friedemann Köster
- Thilo Michael
- Gabriel Mittag
- Falk Schiffner
- Steven Schmidt
- Saman Zadtootaghaj

User Experience

- Benjamin Weiss
- Britta Hesse
- Carola Trahms
- Patrick Ehrenbrink
- Stefan Hillmann



Speech

- Laura Fernández Gallardo
- Sebastian Möller
- Benjamin Weiss
- Michael Wagner

Next Generation Crowdsourcing

- Tim Polzehl
- Babak Naderi

Usable Security and Privacy

- Lydia Kraus
- Maija Poikela

Quality and Usability Lab

Team



Quality and Usability Lab

Laborräume



Quality and Usability Lab

Lehrveranstaltungen im WS 2016/2017



Integrierte Lehrveranstaltungen (IV): 4 SWS, 6 ECTS

- Einführung in die Medieninformatik
- Speech Communication (Speech Signal Processing and Speech Technology; in Englisch)
- Audiotechnik II (FG Audiokommunikation)

Vorlesungen (VL): 2 SWS, 3 ECTS

- Computer-Supported Interaction (in Englisch)

Studienprojekt (SP): 4-6 SWS, 6-9 ECTS

- Studienprojekt „Quality & Usability“
- Neuro-Usability

Seminar (SE): 2 SWS, 3 ECTS

- Usable Privacy (in Englisch)
- Quality and Usability: Special Topics
- Biometric Identification and Verification (in Englisch)
- Selected Projects in Vision & Augmented Reality (in Englisch)
- Affective Computing

Colloquium (CO)

- Forschungskolloquium „Usability“



Quality and Usability Lab

Lehrveranstaltungen im SS 2017



Integrierte Lehrveranstaltungen (IV): 4 SWS, 6 ECTS

- Usability Engineering
- Multimodal Interaction (in English)
- Digitale Systeme (VL+UE)

Vorlesungen (VL): 2 SWS, 3 ECTS

- Advanced Topics in Computer Vision (in English)

Seminar (SE): 2 SWS, 3 ECTS

Quality and Usability: Versch.Themen

Studienprojekt (SP): 4-6 SWS, 6-9 ECTS

- Studienprojekt „Quality & Usability“
- Neuro-Usability
- Medienprojekt
- Medienprojekt (Medienerstellung)

Colloquium (CO)

- Forschungskolloquium „Usability“



IV Digitale Systeme

Sebastian Möller, Carola Trahms

Termin

VL Dienstags, 8-10 Uhr, H 2013, ab 25.04

UE Gruppeneinteilung über ISIS, Schlüssel wird in erster Vorlesung bekannt gegeben

Inhalt

1. Motivation und Einführung
2. Halbleitertechnik
3. Zahlendarstellung und Codes
4. Boolesche Algebra
5. Schaltnetze
6. Minimierung von Schaltnetzen
7. Standard-Schaltnetze
8. Speicherelemente und programmierbare Logik
9. Schaltwerke
10. Anwendungen Digitaler Systeme

Buchempfehlung



Dirk W. Hoffmann:
Grundlagen der
Technischen Informatik,
4. Aufl., Carl-Hanser-
Verlag, 2014

IV Usability Engineering

Sebastian Möller

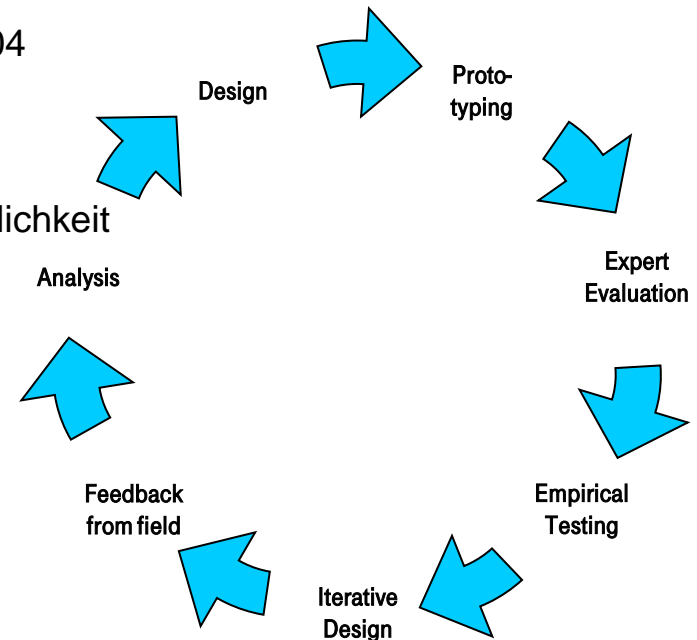
Termin

VL Montags, 10-12 Uhr, Auditorium 3, TEL 20. Etage, ab 24.04

UE individuell nach Gruppe

Inhalt

1. Motivation und Zielsetzung, Qualität und Gebrauchstauglichkeit
2. Grundlagen der Psychophysik und Psychometrie
3. Skalierung
4. Usability Engineering
5. Qualität von Sprach- und Audio-Übertragungssystemen
6. Qualität von Video-Übertragungssystemen
7. Qualität von Sprachdialogsystemen
8. Qualität multimodaler Systeme
9. Qualitätsvorhersage



Zur Vorlesung wird ein Buch/eBook herausgegeben, welches den Vorlesungs- und Prüfungsstoff komplett abdeckt. Trotzdem ist der regelmäßige Besuch der Vorlesung sehr empfehlenswert!

IV Usability Engineering

Sebastian Möller et al.



Übungen

Themen der Gruppen

- Gaming Quality of Experience
- Speech Quality
- Person Attribution



IV Multimodal Interaction (in English)

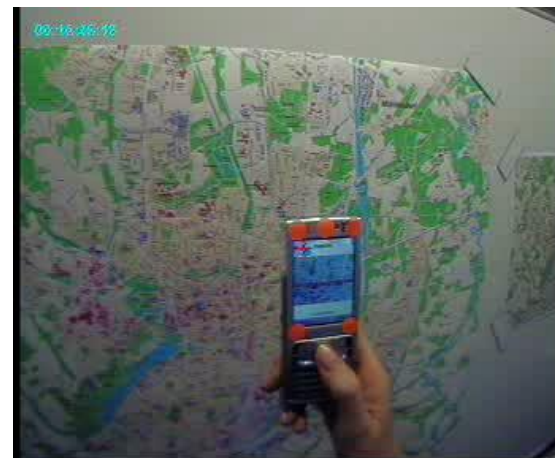
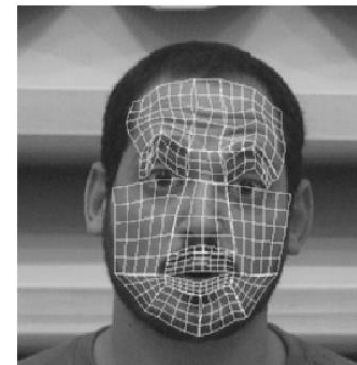
Sebastian Möller, Benjamin Weiss

Date

- Lecture: Mondays 12-14, Auditorium 3, TEL 20, starts 24.04.
- Exercise: Wednesdays 12-14, Auditorium 3, TEL 20, starts 26.04.

Content

- Introduction and Motivation
- Human Perception and Action
- Multimodal Perception
- Multimodal Action
- Multimodal Input Systems
- Multimodal Output Systems
- Multimodal Interactive Systems



Material

Slides will be made available

VL Advanced Vision and Imaging (in English)

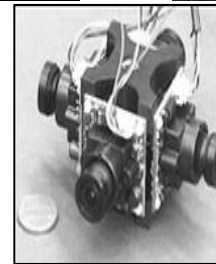
Rahul Swaminathan

Schedule

Thursday 14:00 h -16:00 h

Start 27.04.

Room TEL 208, 2nd floor



Content

This course shall address advanced topics in Computer Vision dealing with weird new camera designs using mirrors and complex lenses or networks for panoramic and high dynamic range imaging, recognition and 3D reconstructions. To do this the students shall be introduced to the basic mathematical and scientific tools needed to address advanced topics, starting with imaging geometry and camera models, low level image processing for recognition, reconstruction and HDR imaging.

PJ Medienprojekt (Medienerstellung)

Sebastian Möller, Falk Schiffner, et al.



Raum

Auditorium 3, 20. Etage TEL-Gebäude

Zeit

Intro Session: Fr. 21.04.2017 (8-10)

Intro Lecture (PM): Fr. 28.04.2017 (8-10)

Midterm Presentation: Fr. 16.06.2017 (8-10)

Final Presentation: Fr. 21.07.2017 (8-10)

Weitere Termine nach Absprache

Kontakt

falk.schiffner@tu-berlin.de



PJ Neuro-Usability (evtl. in English)

Jan-Niklas Voigt-Antons

Schedule

Fridays 14-16, Auditorium 1, TEL building 20th floor,
starts 28.04.

Content

Based on the Seminar Affective Computing and ongoing research at Telekom Innovation Laboratories, the participants will set up an own study project to deploy psychophysiological measures for usability evaluation or interaction.



Introduction to PJ Interdisziplinäres Medienprojekt, Quality and Usability

- Studienprojekt Quality & Usability: 2 projects, 6/9 ECTS
- Interdisziplinäres Medienprojekt: 2 projects, 10 ECTS
- A 4th project can be participated in both modules

Introduction will be at the 21.04.

- Interdisziplinäres Medienprojekt: 21.04., 10:00 - 12:00, Raum 208, 2. Etage TEL-Gebäude
 - Studienprojekt Quality & Usability: 21.04., 10:00 - 12:00, Raum 208, 2. Etage TEL-Gebäude
1. Tutors present each project.
 - Questions from students after each presentation
 2. Students indicate which project they are interested in
 - In case of too many students, we will do a raffle
 3. Individual group discussions with the tutors

SEM Quality and Usability

Sebastian Möller et al.



Datum & Ort

Montags, 16-18 Uhr, Auditorium 1, Geb. TEL 20. Etage, erstmalig am 24.04.2017

Bis zum 07.05.2017 muss eine Anmeldung in QISPOS erfolgt sein!

Topic 1: Gamification (Babak Naderi, Steven Schmidt, Saman Zadtootaghaj, Auditorium 1)

Topic 2: Text-To-Speech Technology (Benjamin Weiss, Auditorium 2)



Forschungskolloquium „Usability“



Termin

Montags 14:15 h – 15:00 h, Auditorium 1, TEL 20

Themen

Wechselnde Themen aus allen Bereichen des Quality and Usability Lab, insbesondere Mensch-Maschine-Interaktion, Qualitätsmessung, Usability und User Experience, mobile Interaktion, Sprach- und Audiosignalverarbeitung, Crowdsourcing, Usable Security und Privacy

Aktuelle Termine und Themen unter

<http://www.qu.tu-berlin.de/?id=175823>



Mehr Informationen unter
www.qu.tu-berlin.de.