



Human Computer Interaction

Chapter 1: Introduction to HCI Part 3

Prof. Dr. Björn Eskofier
Machine Learning and Data Analytics (MaD) Lab
Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)
Summer Term 2024

01 Subjects and Themes

02 Conferences and Student Ideation Camps

03 Motivating Human Computer Interaction

04 Why is usability relevant?

05 User Experience



Machine Learning and Data Analytics Lab (MaD) in Erlangen








Why is usability relevant?

Why is usability important?



→ Quality & efficiency.
→ How well it supports.

Improving usability can

-  Increase productivity of users — ↑ productivity.
-  Reduce costs (support, efficiency) — ↓ cost (support, efficiency)
-  Increase sales/revenue (web shop) — ↑ sales / revenue
-  Enhance customer loyalty — ↑ customer loyalty
-  Win new customers — win new customers.

Many case studies that show the benefit of usability , E.g. <https://www.userfocus.co.uk/casestudy/>

Usability is often considered as sign of quality

Why is the UI now important?



Issues that relate to advances in technology

- Becomes harder to discriminate by technology
- Massive availability of bandwidth, storage, and processing
- New input/output technologies (e.g., biometric, 3D-displays, eye-tracking)
- Towards information appliances

hard to discriminate
→ More availability / abundance.

new i/o tech
→ information appliances.

New understanding of computing

- Willingness for training decreases (great demand for an obvious way to use a device – RTEF?)
- New qualities besides efficiency become relevant, e.g., pleasure and fun

Read the Fucking manual.

Not just be efficient

→ Satisfaction.

Why is the UI now important?



Machine Learning
Data Analytics



old computer vs centered

The old question:

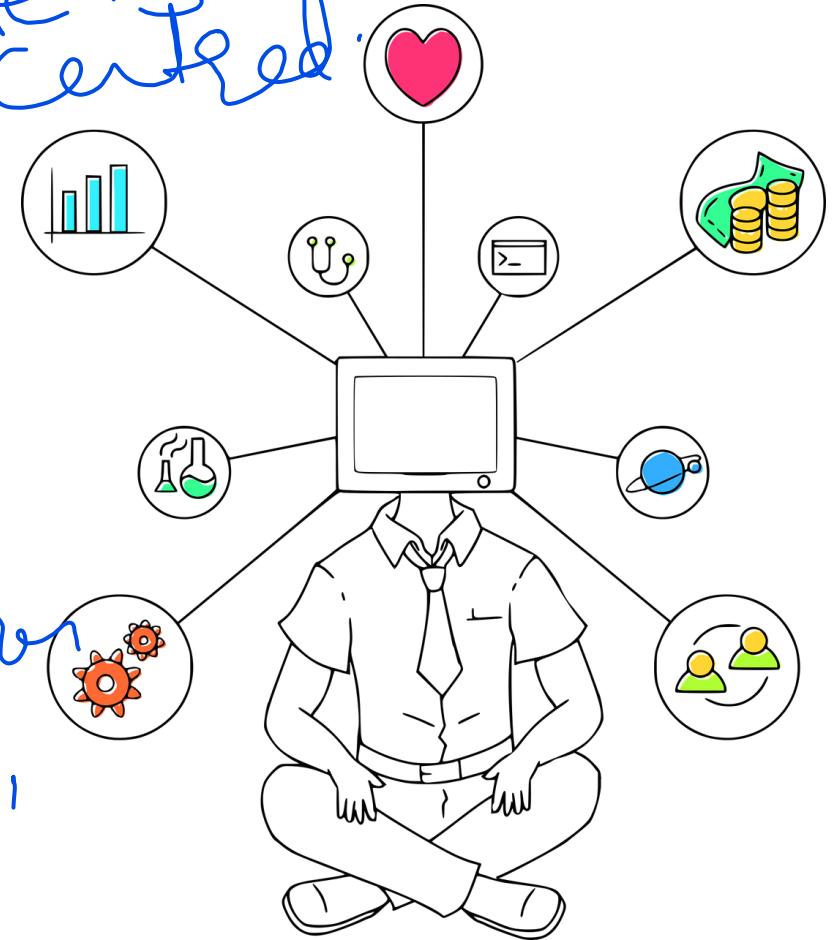
What can computers do?

The new question:

What can humans do with
computers?

New Question

"Human Centered"



[4] B. Shneiderman. Leonardo's Laptop: Human Needs and the New Computing Technologies. <https://mitpress.mit.edu/books/leonardos-laptop>

Many jobs that require an understanding of HCI



Machine Learning
Data Analytics



(Software systems - design & implement)

01 Software Developers

People who design and implement software systems

02 Interaction Designers

(Design & Interaction)

People involved in the design of all the interactive aspects of a product

03 Usability Engineers

(Evaluate usability principles)

People who focus on evaluating products, using usability principles

04 Web Designers

(Visual design)

People who develop and create the visual design of websites (layout)

05 Information Architects

(Ideas - plan / structure interactive products)

People who come up with ideas of how to plan and structure interactive products

06 User Experience Design

(UX - all the above ???)

People who do all the above (but who also carry out field studies)



User Experience

You cannot NOT create

You cannot **NOT** create a
User Experience

(Def: 2)

"A person's perceptions and responses that result from the use or anticipated use of product, system or service"

always can create
a UX experience

Use / Anticipated Use → Perceptual Responses

ISO 9241-210:2008. *Ergonomics of human system interaction – Part 210: Human-centered design for the interactive systems*

Factors Influencing the UX



Machine Learning
Data Analytics



Product Design; Context of Use; User skills & Expectations

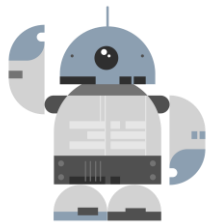


Product Design



Context of Use

User Experience
(UX)



User's Skills and Expectations