

Human-Computer Interaction

Prof. Antonella De Angeli, PhD

Antonella.deangeli@disi.unitn.it



Ground rules

- To keep disturbance to your fellow students to a minimum
 - Switch off your mobile phone during the lecture!!!
 - Arrive on time. If you are more than 15 minutes late, please wait until there is a break and copy the notes from a friend.
 - Keep talking, whispering and other background noise to a minimum.
 - If there is something you don't understand, please interrupt me at any time to ask if I could clarify.
 - If you want to make a general remark, please wait until there is a natural break.
 - **Participate!!!!**

Human-computer interaction

“a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them”

(ACM SIGCHI, 1996, p.5)

Goals of HCI

- “To develop or improve the safety, utility, effectiveness, efficiency, and usability of systems that include computers”
 - Interacting with computers 1989, p. 3

Module aims

- Present the techniques and issues involved in promoting usable and engaging interaction design
- Give examples on how to
 - document users needs and goals
 - translate user needs/goals into design specifications
 - evaluate the quality of user interfaces and design alternatives

Disciplines contributing to HCI

- Computer Science
- Cognitive psychology
- Social and organisational psychology
- Ergonomics & Human-Factors
- Linguistics
- Artificial Intelligence
- Philosophy, sociology, and anthropology
- Engineering
- Design

Interface Design

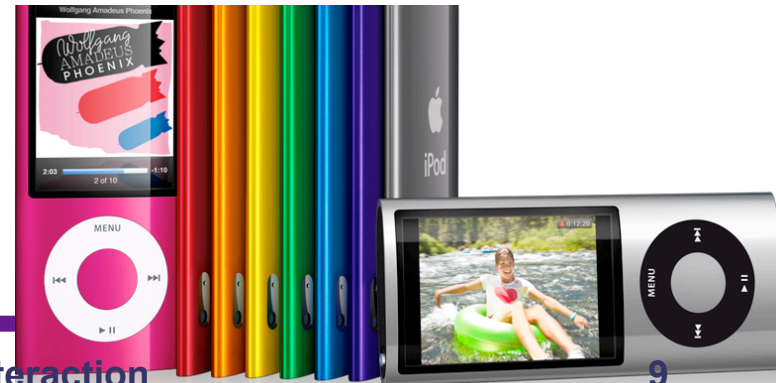
- Technology-driven design
 - Technology influences the design of the interface which give the user the functionality and interaction mechanisms of the system
- User-centered design
 - User requirements define the functionality of the interface which runs the design of the technology

What is an interface?



Evolution of interfaces

- **50s** - Interface at the hardware level for engineers - switch panels
- **60-70s** - interface at the programming level - COBOL, FORTRAN
- **70-90s** - Interface at the terminal level - command languages
- **80s** - Interface at the interaction dialogue level - GUIs, multimedia (<http://www.cs.cmu.edu/~amulet/papers/uihistory.tr.html>)
- **90s** - Interface at the work setting - networked systems, groupware
- **00s** - Interface becomes pervasive
 - RF tags, Bluetooth, mobile devices, consumer electronics, interactive screens, embedded technology
- **10s** -Interface disappears
 - Focus on tasks, experiences, emotions, social connections, beauty



- We become part of the interface or rather we bring the interface with us everywhere, we create practices around the interface
 - Christensen M.S. (2006) As We May Feel -- Interpreting the Culture of Emerging Personal Affective Mobile Media. PhD Thesis, IT University of Copenhagen

Interaction Design

- “the design of spaces for human communication and interaction”
 - Winograd (1997)
- designing interactive products to support people in their everyday and working life
- Creating (user) experiences which fit, extend, and enhance the way people work, communicate and interact
- Increasingly, more application areas, more technologies and more issues to consider when designing ‘interfaces’

On-line resources

- <http://www.sigchi.org/>
 - ACM special interest group
- <http://www.id-book.com/>
 - companion website for Preece et al.'s book
- <http://hcc.cc.gatech.edu/>
 - web portal maintained by Georgia Tech.
- <http://www.baddesigns.com/>
 - illustrated examples of things that are hard to use because they do not follow human factors principles

Reading List

- CORE READING:

Sharp, H., Rogers, Y., & Preece, J. (2011). Interaction Design: beyond human-computer interaction. New York: John Wiley & Sons, Inc.
3rd

- Gamberini, L. Chittaro, L. and Paternò, F. Human-Computer Interaction, Pearson, 2012.

– NOTE THE HANDOUTS AND LECTURE NOTES DO NOT REPLACE THE CORE READING

Assessment

- Coursework 100%
 - A practical exercise of UCD (group project with individual activities and reports) – during the teaching Semester
- Attendance required
 - Fixed delivery dates

Groups

- 4 people each
- Subscribe on course website
- Active, constant participation expected

