Human-Computer Interaction course at the University of Zurich November-December 2006.

Course abstract

The aim of this course is to give participants basic knowledge of Human-Computer Interaction (HCI). The course will present and discuss human cognition as well as a user's perspective to computer-supported work. The design of interactive computer systems that are effective, efficient, easy, and enjoyable to use is of prime importance. The course will cover a broad range of knowledge to support the design and evaluation of user-friendly interfaces. After this course, participants shall be able to solve standard HCI design and evaluation tasks. They shall also be able to go deeper into most HCI areas by taking advanced lectures or even by self-study.

The lecture blocks of the course will cover: Human Perception and Cognition, Evaluation Techniques, Interaction, Task Analysis, Interaction Design, Cognitive Models, HCI and Software Engineering, Multimodal Interaction, Ubiquitous Computing, Augmented and Tangible User Interfaces (UI), Design Knowledge (rules, principles, and standards), Collaboration and Groupware, Perceptual Cues and Tricks, Virtual Reality.

Prerequisites

Course participants are expected to have accomplished two years (or more) of computer science or computer engineering studies at university level. At least one of these courses should include actual programming in a language such as Pascal, Oberon, C, C++, Java etc. Additional experience in prototyping languages, such as Flash or Director, is appreciated. Students should have a good command of spoken and written English. An interest in UI design and usability issues is an advantage.

Course Modalities

The course will require active participation in three distinct teaching modalities: lectures, exercises, and assignments. These three modalities, lectures, exercises, and assignment, are described in the following. Detailed information is given on respective parts of the course web site.

• Participants are strongly required to actively attend the **lectures**. Some of the important information and discussion will be given in the lectures only. Participants are strongly recommended to read the textbook respective chapter(s) before the corresponding lecture.

• There will be 2 **exercises**. Exercises will be handed out at the beginning of each exercise session. This is a one page written report and must be according to an **exercise report template**. This report must be written in US or UK English.

• Groups of 3 students (not more, not less), shall work together for the **assignment**. The assignment shall be 6 pages (not more, not less) and according to writing guidelines and template. The assignment shall be handed in twice, first as a draft version, then as a final version. Both draft and final version must be handed in per E-mail and in two paper copies. The draft versions will be evaluated and feedback given per E-mail. The final version will be evaluated and graded.

Lecture Time-plan

Lectures will run between 12:00 and 16:00.

- Saturday 4. November 2006: 4 hours lecture, by M. Fjeld
 - -- Human Perception and Cognition
 - -- Evaluation Techniques
 - -- Interaction
- Saturday 11. November 2006: 4 hours lecture, by M. Fjeld -- Task Analysis
 - -- Interaction Design Basics
 - -- Cognitive Models
- Saturday 18. November 2006: 4 hours lecture, by M. Fjeld
 - -- HCI and Software Engineering
 - -- Multimodal Interaction
 - -- Ubiquitous Computing
 - -- Augmented Reality and Tangible UIs
- Saturday 25. November 2006: 4 hours lecture, by M. Fjeld
 - -- Design Knowledge
 - -- Collaboration and Groupware
- Saturday 2. December 2006: 4 hours lecture, by A. Kunz -- Perceptual Cues and Tricks
 - -- Virtual Reality
- Saturday 9. December 2006: 4 hours for unforeseen cases/needs
- Saturday 16. December 2006 -- 4 hours written examination

Assignment dates (these are preliminary, and may change at wish/need)

- Friday 10. November 2006, 14:00 16:00: Assignment, by M. Fjeld -- Exercise 1: Evaluation of an interactive system
 - -- Brief tutoring of written assignment (15 minutes)
- Friday 17. November 2006, 14:00 16:00: Assignment, by M. Fjeld -- Brief feedback on answers for Exercise 1.
 - -- Exercise 2: Task analysis for interface (re-)design
- Friday 24. November 2006, 14:00 16:00: Tutoring, by M. Fjeld -- Brief feedback on answers for Exercise 2.
 - -- Tutoring of written assignment

Teachers

Prof. Dr. techn. Morten Fjeld, Chalmers TH, Göteborg, Sweden Web sites: www.chalmers.se/cse/EN, www.fjeld.ch, and www.t2i.se

Prof. Dr. habil. Andreas Kunz, ICVR, ETH Zurich Web site: www.icvr.ethz.ch