



[The official CHI 2007 title page will look different.]

Ensuring the Usability of Systems That Adapt to Their Users

CHI 2007 Course Notes

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Instructor Biography



Anthony Jameson is a principal researcher at the German Research Center for Artificial Intelligence (DFKI) and adjunct professor of human-computer interaction at the International University in Germany. He has been involved in research- and application-oriented projects concerning systems that adapt to their users for more than 15 years, being one of the first to address topics like conversational product recommender systems, Bayesian user modeling, and adaptation to a user's situational resource limitations. The author of the chapter *Adaptive Interfaces and Agents* in the *Human-Computer Interaction Handbook* (Erlbaum, 2003 and 2007), he has given numerous tutorials and invited talks on topics related to this course. Other current research activities concern language technology systems, systems for knowledge formalization by subject matter experts, and usability evaluation through user simulation. Further information, including links to many electronically available publications and presentations, is available at the web homepage <http://dfki.de/~jameson/>.

Agenda

Time	Topic
5 minutes	Introduction; preview of the course
10 minutes	Presentation of basic concepts with reference to the system of Case Study 1
25 minutes	Case Study 1: amazon.com recommendations
20 minutes	Case Study 2: Microsoft's Smart Menus and recent alternatives
15 minutes	Case Study 3: An adaptive bookmarking tool for conference attendees
15 minutes	Discussion of questions and examples supplied by participants from their own experience

Objectives of the Course

Topic and Background

- This course concerns ways of dealing with the usability issues that typically arise in the design of systems that adapt to their users, which range from recommender systems in e-commerce to adaptive user interfaces.
- Although some of these usability issues have been discussed in practice and in the literature since the 1980s, the most widespread approach to dealing with them is the application of general principles like "put the user in control".
- Such principles are of limited use to designers who need to make specific design decisions; their uncritical application can have side effects that outweigh the benefits of adaptation.

Objectives

- After completing the course, participants will be better equipped to make informed design decisions concerning the usability issues associated with adaptivity. They will:
 1. be familiar with a variety of concrete examples of the forms that the usability issues can take;
 2. be aware of general concepts and strategies that have been applied in dealing with these issues;
 3. have some experience in considering the tradeoffs that typically arise when these strategies are applied.

Abstract

A familiar and commercially successful example – the recommendation facilities of amazon.com – will be used to introduce and motivate the central questions addressed by this course. With reference to this example, the class of systems that adapt to their users will be defined, and a preview of the usability issues that often arise with user-adaptive systems will be given.

In the main part of the course, a sequence of three case studies will be presented, whose overall goal is to build up a sophisticated understanding of ways of dealing with these usability issues. Each case study will include:

- a demonstration or other concrete presentation of a deployed system that shows participants what specific forms the usability issues take and what system properties give rise to them;
- a discussion of the *preventive* or *remedial* measures that were – or could have been – applied in the design of the system under discussion;
- a discussion of tradeoffs involved in the application of these measures and the role of differences among users' preferences;
- references to some results of usability studies involving the example system or comparable systems.

The case studies concern systems whose design is at least partly successful in addressing the usability issues. Together, they illustrate many of the most important general issues and design strategies.

The concluding general discussion will offer the participants a chance to propose for discussion examples from their own work and/or raise any additional issues that they consider important.

The supplementary printed materials – worksheets and a survey chapter – are intended for independent use by the participants after the course.