Intelligent User Interfaces and Hypermedia
Spring 2006
Tuesday 12:00 PM – 3:00 PM
Instructor: Luis Francisco-Revilla
Office hours: TBA or by appointment
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Description of Course
This course studies the effects of embedding Artificial Intelligence (AI) mechanisms in user interfaces, interfaces for knowledge acquisition and representation, and developing cooperative problem solving systems. The course will introduce basic concepts and techniques of AI including implementation approaches and will discuss its use, contrasting the perspectives of Herb Simon and Lucy Suchman.

Given the influential role of hypermedia systems today, the course will focus on how Intelligent User Interfaces is instantiated as Adaptive Hypermedia. Support for this will be drawn by reviewing the concept of hypertext/hypermedia, its origins and implications for human communication.

During the course, students will discuss selected readings from the fields of Intelligent User Interfaces and Hypermedia. Through projects they will learn how to work with a user community to identify the potential for intelligent support, design, and instantiate that support, and evaluate the resulting application.

Prerequisites
None. However, previous experience in programming and some knowledge of AI and Computer-Human Interaction (CHI) are preferred but not required.

Major Topics
The class will provide an overview of topics such as:

- Interfaces for knowledge acquisition and knowledge representation
- User modeling
- Intelligent interface agents
- Natural language and non-textual interfaces
- Explanation and presentation generation
- Programming by demonstration
- Hypermedia theory and design
- Hypermedia systems
  - Client side technologies (XHTML and CSS, Javascript, Applets)
  - Server-side technologies (CGI’s, Sevlets, PHP)
- Evolution of hypermedia systems (1960s, 1980s, World Wide Web)
- Alternative models of hypermedia (e.g., spatial hypermedia)
- Adaptive hypermedia
Class Work

Readings:
- Collected journal and conference papers (TBA)

Assignments:
The class will include projects, readings, and short assignments. (No exams.)

Projects
Projects will be group projects (3-5 members, with more members indicating a larger project). Projects are to include selecting a user community and specific tasks to support, designing an intelligent user interface (such as an adaptive hypertext Web page) to support the task, development of a prototype, and planning an evaluation of the prototype's success to support the task. Project topics must be approved by the instructor.

Final Report
The report for the final project must be 8-12 pages and formatted according to the ACM Conference Format. You can cut and paste into this format and use the paragraph styles provided. Formats can be found at:

http://www.acm.org/sigs/pubs/proceed/template.html
http://sigchi.org/chipubform/

Grading

Class participation  15%
Assignments        35%
Final project      50%