CIS 677: Knowledge-Based Interfaces

Course Syllabus
March 30 , 2004

Spring *2003:* TuTh 10:00-11:20 am, 112 Willamette to be changed to 200 Deschutes
Prerequisites: CIS 571 Intro to AI, or instructor's permission.
Mailing alias cis677@cs.uoregon.edu
Website: http://www.cs.uoregon.edu/classes/04S/cis677
Instructor: Prof. Sarah Douglas, 343 Deschutes, 346-3974, email: douglas@cs.uoregon.edu. Office hours are MWF 1:30-2:30.

***Description*:** The topic of this course is Ambient Interfaces.What is an ambient interface? It is the integration of architecture (space) with computer technology. It is also known as a smart environment. The interface then is the surface of the room itself such as the walls, desks, etc. These become interactive with human-beings who enter the space either intentionally with elements such as interactive touchable surfaces or context-aware sensors. An example of this is the IBM Everywhere Displays Project (http://www.research.ibm.com/ed/). At another extreme is the use of ambient interfaces in art. By the 1980s, the musical instrument digital interface (MIDI) made it possible for musical events to be generated by light detection, motion detection, or other environmental sensors. This is the foundation for computer-based performance art.

Ambient Interfaces can also be associated with "user-friendly information and services anywhere and anytime." Still others relate it to the anticipated cross-fertilization of three emerging technology fields: (a) ubiquitous computing, (b) wireless and ubiquitous communication, and (c) intelligent multimodal user interfaces. Keywords are: context-aware, ambient interface, invisible interface, transparent interface, augmented reality, pervasive computing

Ambient Interfaces are a major funding area of European Community computing research activities for the next ten years and a major theme of the CHI 2004 Conference on Human Factors in Computing Systems in Vienna, Austria in April this year.

***Readings*:** The readings for this course will be based on conference and journal articles. We will use a rather free-form agenda with major topics, but this agenda may be revised based on what we discover.

Meeting	*Date*	*Topic*	*NOTES*
Week 1	3/30	Introduction, ambientRoom project	Paper 1 and video
	4/1	IBM Everywhere Displays project	Paper 2
Week 2	4/6	Architecture one more paper	Paper 3 Ishwinder not here
	4/8	Support for disabled people	Tour of Lillis building Meet in lobby at 9:30am Paper 4
Week 3	4/13	Performance art	Guest talk Colin Ives
	4/15	Performance art	Jess will lead
Week 4	4/20	Technological implementation	
	4/22	Technological implementation	
Week 5	4/27	No class	CHI 2004
	4/29	No class	CHI 2004

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Week 6	5/4	Interface/interaction issues	Tim will lead
	5/6	Interface/interaction issues	
Week 7	5/11	Context-awareness	Ishwinder will lead
	5/13	Context-awareness	
Week 8	5/18	Information agents	
	5/20	Information agents	
Week 9	5/25	Ethical issues: privacy	Peter will lead
	5/27	Ethical issues: privacy	
Week 10	6/1		
	6/3	Review course and wrap-up	
Week 11	6/11 FRI	NO CLASS (Final Exam date)	FINAL Papers due

Paper 1 [Architecture: brave-CHI'98.pdf] and video in CHI '98
Ishii, H., Wisneski, C., Brave, S., Dahley, A., Gorbet, M., Ullmer, B. & Yarin, P. (1998). ambientROOM: Integrating ambient media with architectural space (video). Extended Abstracts of CHI'98: Conference on Human Factors in Computing Systems, 173-174.

Paper 2 [ARCHITECTURE IBM: 1-interact03.pdf]
"Embedding Interactions in a Retail Store Environment: The Design and Lessons Learned", Noi Sukaviriya, Mark Podlaseck, Rick Kjeldsen, Anthony Levas, Gopal Pingali, Claudio Pinhanez. *Proc. of the Ninth IFIP International Conference on Human-Computer Interaction (INTERACT'03).* Zurich, Switzerland. September 2003.

Paper 3 [Architecture: hebb-cscw02.pdf]
Carter, Scott, Mankoff, Jennifer and Goddi, Patrick. (2002) "Representing and supporting action on buried relationships in smart environments." CSCW 2002 Workshop Paper.

Paper 4 [Disabled: 469-ho-ching.pdf]
Jennifer Mankoff at UC Berkeley CS Dept.
Ho-Ching, F. Wai-ling, Jennifer Mankoff, James A. Landay, (2003). "From Data to Display: the Design and Evaluation of a Peripheral Sound Display for the Deaf." In Proceedings of CHI 2003. 8 pages.

Course Requirements:

1. You should attend every class if you can and participate in discussion by reading the papers.
2. You will be expected to lead one class meeting. This will include a 20 minute brief talk introducing the topic and elaborating beyond the readings, and facilitating a discussion.
3. There will be a final research paper (~15-25 double-spaced pages) due at 5 pm on the date of the final exam on June 11, 2004.

Grading:

Leading class meeting 20%
Class participation 30%
Final project or paper 50%

You must get a B- in the class to get a pass as a graduate student.