Critical Approaches to Human-Computer Interaction

As computers have moved off our desktops and into our homes, our cities and our pockets, social scientists and computer scientists are confronting newer questions than just, “does it work?” Instead, researchers and designers face questions about the complex interfaces between the values of social and technological systems, and how they intersect and collide. Such questions demand creative and interdisciplinary approaches to new problems, and are inspiring new solutions too. Addressing this issue, this senior level seminar will introduce you to contemporary qualitative studies in Human Computer Interaction (HCI): in particular, the “critical computing” perspective.

This is a small, dynamic, senior level seminar that will expand your understanding of computing systems in our modern world. You will read about up-to-the-minute research in this area that combines computer science, sociology, anthropology, engineering and new media art. We will bring together diverse fields like sociology, computer science, anthropology, and the humanities. We will participate in using, experimenting with and building systems related to this work. You will also work together to creatively design, implement and evaluate a project yourselves. If you are thoughtful and creative and interested in exploring the relationships between computing and social behavior, this is the class for you.

Dr Janet Vertesi
609-258-9053
jvertesi@princeton.edu
104A Schiede Caldwell House
Office Hours Mon. 10am - 12pm

How do people use contemporary technologies – like cell phones, MMORPGs, text messages, and social network sites – in their daily lives? What impact do these systems have on relationships, mobility, global systems, activism, sustainability and art? And can we design new systems to support these experiences? This senior seminar will bring together students in the social and computing sciences in an introduction to qualitative studies in Human Computer Interaction (HCI), to examine our assumptions in computing systems and reach for new dimensions of user experience.

How do we generate robust and creative user-centered designs? The Cultural Probe, a tool developed by Bill Gaver and colleagues at the Royal College of Art, can help us glean designerly insights into the user’s world. We’ll discuss these and other qualitative research methods in Week 5.
Ask yourself:

Are you listening to your instructor? Are you listening to your peers? Are you listening actively? Are you asking questions of your peers? Are you respecting what they have to say? Do you respond respectfully and thoughtfully to their comments? Do you prepare questions or thoughts to share in class based on your readings? Are you asking questions about material you don’t understand? Are you drawing connections to other course material? Do you come to class well-rested, fed, and leaving distractions at the door? Do you give your full attention to what is going on?

Human-Computer Interaction isn’t always one-to-one. Here, a group of Starcraft enthusiasts participate as spectators at a gaming conference (in Cheung et al.) We’ll discuss gaming in its many forms in Week 7.

What is Human-Computer Interaction?

HCI is an interdisciplinary field, bringing together a range of resources to help understand how people interact with computers, project how they ought to interact with computers, and then to build computational artifacts to reflect this knowledge. This means that a variety of methods are available to HCI researchers to explore human-machine interactions.

In this course, we will read and talk about computers, users and systems in many contemporary contexts, such as virtual worlds, mobile devices, urban games, new media art, sustainability, and technology adoption in developing nations. We will also learn qualitative techniques like ethnography, user studies, and ethnomethodology, especially as they are used in the analysis, design, and evaluation of human-computer interactions. These tools and techniques come from a range of fields and we will remain attuned to how they are imported, adopted, adapted and used.

In particular, we will learn about a new strain of research, sometimes called critical computing, that tries to question underlying assumptions in computer systems and reaches for new definitions of user experience. Its researchers find inspiration in critical theory, the humanities, critical thinking, anthropology and qualitative sociology, and arts-based practices. As research and design go hand in hand in HCI, in this course we will explore how these qualitative methods can both explore how technology is used in everyday life, and produce novel design possibilities and spaces for computation.

An Interdisciplinary Classroom

HCI is an interdisciplinary field, so this will be an interdisciplinary course. For example, the tools of sociology and anthropology are important for understanding how people actually use computers. But as a domain of computer science, HCI uses these social tools and techniques to imagine, design, implement and evaluate computational systems.

Look around you: your peers in this class come from other parts of the university. Some are computer scientists, others are sociologist, and others are both or neither. We are all here because we have an interest in contemporary computing, in possibilities for research, design and understanding. To be successful as a group, we will have to listen hard to each other, ask good questions, and trust each other’s points of view. We can and we will disagree, but we can do so constructively. We can and we will make this disciplinary diversity our strength.

NOTA BENE: This is not a lecture course, so there will be no notes online if you miss a week. Participation is central and essential to your and your classmates’ learning. We will not deal with the psychology of humans and machines, nor offer guidelines on how to make pretty widgets or buttons. Nor will this course help you to approach The Singularity or try out a pet project. If this is a problem for you, see the instructor.
### grades

You will be evaluated based on our activities in class and beyond related to the course. Readings on current topics in critical HCI will get you thinking and talking about important new ideas. Lab activities will get your hands dirty and get you out into the world as an HCI researcher. We will work together as a class to design, build, and evaluate a design project as your final contribution to the course.

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<td>Attend and participate! We will read approx. 5 academic papers per week of cutting-edge research. Come to class with readings done and ready to discuss.</td>
<td>A take-home midterm exam on course concepts. Due in class after the midterm break.</td>
<td>A class research and design project will stand in lieu of a final exam. We will discuss and make time for this work during class time as the semester progresses.</td>
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<td>Short responses to AT LEAST EIGHT of the reading weeks. Include a brief summary with thoughts and comments about at least one of the papers, and engage your fellow classmates in discussion about the papers and their implications. Due as postings on Blackboard BEFORE NOON on Tuesday.</td>
<td>Four lab reports based on in-class activities that will get you out in the field, get your hands dirty with qualitative fieldwork, think creatively through new designs, or experience systems we read about. Due to instructor by 5PM FRIDAY.</td>
<td>A short final paper about your experiences and contribution to the class project.</td>
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### Attendance & Participation

This is a seminar course: completion of readings prior to class, seminar attendance and participation are mandatory and graded. You are expected to come to class, having completed the reading and/or writing assignments due that day.

If you have to miss a class, you must contact me beforehand with a valid excuse. After two unexcused absences, every further class you miss will subtract a third of a letter (i.e. A-, B+, B...) from your final grade.

### In-Class Computing

Bring your computers, iPads, phones, or any other devices you wish to class. All readings will be available electronically and we will host active discussion on Blackboard and through a class-designated backchannel.

Portable recorders and cameras will come in handy for fieldwork during the lab sessions too, but please do not record your peers in class.

Please be respectful of your professor and your classmates by not engaging in outside-class activities on your devices. No text messages, Twitter feeds, Facebook browsing, chatting or general web work that is not directly related to class.

### Working with sources

Academia is all about using sources: reading them, talking about them, critiquing them or exploring them. But plagiarism, or passing off someone else’s work or ideas as your own without crediting them properly, is unacceptable. All sources – electronic and paper – must be referenced with the appropriate formatting. Whether you choose MLA, Chicago style, APA or typical formats in the sciences, please make sure you are consistent! Please note that I will consider your choice of sources in your paper towards your grade, so use your judgment wisely. Plagiarized assignments will result in a grade of zero, and will be subject to University policies on academic integrity. If you have any questions about what constitutes plagiarism, please do not hesitate to contact me.

### On-line Sources

The internet is not, wholesale, an academic source. Certainly, many academic sources can be found online, such as electronic versions of books, newspapers, academic journals, and conference proceedings. But personal, commercial, or organizational websites are not appropriate to use as sources in your college career. If you have any doubts as to whether or not a website constitutes a reliable source, send me an email with the URL and I will check it out for you as soon as I possibly can. In general, however, anything you access on [http://portal.acm.org](http://portal.acm.org) you should consider an academic source.
### Week 1

**Values in System Design**


### Week 2

**Putting the “Social” in Social Network Sites**

danah boyd. 2009. Implications of user choice: the cultural logic of "MySpace or Facebook?". *interactions* 16, 6 (November 2009), 33-36.


### Week 3

**Computing in the Home**


### Week 4
#### Mobility and Ubiquitous Computing


### Week 5
#### Doing Qualitative Fieldwork in HCI


### Week 6
#### Activism, Hacktivism, and Art

Anthony Dunne and Fiona Raby, “Section 03: Design Noir,” “Section 04: Designer as Author” and “Placebo Project” description. Design Noir: the Secret Life of Electronic Objects. 44-79.

Daniela Rosner and Jonathan Bean. 2009. Learning from IKEA hacking: i'm not one to decoupage a tabletop and call it a day.. In Proceedings of the 27th international conference on Human factors in computing systems (CHI '09). ACM, New York, NY, USA, 419-422.


## Week 7
### Games and Play


* take-home midterm due *

## Week 8
### Cities and Crowds


* Jenn Thom-Santelli, "Mobile Social Software: Facilitating Serendipity or Encouraging Homogeneity?", *Pervasive Computing, IEEE*, vol.6, no.3, pp.46-51, July-Sept. 2007


## Week 9
### Techno-Spirituality


## Week 10
**Gender, the Body, and Intimacy**


## Week 11
**Sustainability**


## Week 12
**Global Systems**


## May 15
**Final Assignments Due**
Conference Publications

Look out for papers published at the following conferences or in these journals, as they represent the work in this field. These papers are all extensively peer-reviewed and “count” as academic work:

• alt.CHI – A special conference track at CHI aimed at pushing the boundaries of the field and promoting unusual approaches. Peer reviewed and archived.
• CSCW – Computer Supported Cooperative Work. Primarily qualitative, ethnographic and microsociological approaches to studying people working together in teams using computers. Usually focused on the workplace, distance, and intercultural communication, although recently expanded to gaming etc.
• DIS – Designing Interactive Systems. “The premier, international arena where designers, artists, psychologists, user experience researchers, systems engineers and many more come together to debate and shape the future of interactive systems design and practice.” Very interdisciplinary, arts-oriented space.
• Ubiquitous and Pervasive Computing – Concentrate on embedding computing technologies and systems into everyday environments. Sensor networks, studies of the home, urban computing, and mixed-media spaces.
• Mobile HCI. Looks at mobility in all forms of user experience, especially designing for phones.

Journals

These journals specialize in the relationship between technology and social experience.

• Human-Computer Interaction
• ToCHI: Transactions in Computer-Human Interaction
• interactions: a short magazine-style journal for the CHI community
• Computer-Supported Cooperative Work
• Games and Culture
• New Media and Society
• Science, Technology & Human Values
• Personal and Ubiquitous Computing

Institutional Resources

There is a growing community of HCI researchers and designers across academia and industry. Here is a list of respected labs, companies, and programs that foster this kind of research and system design. Feel free to explore these places online, and click through some of the researchers and projects they have on the go, to get a good idea of HCI work in this domain. Many of their projects are described on their websites and are a great way to get an idea for your user study and design projects.

University Laboratories

• Mobile Life Sweden: http://www.mobilitycentre.org/
• iSchool @ University of Michigan, http://www.si.umich.edu/
• DUB @ University of Washington: http://dub.washington.edu/
• Cornell University Information Science, http://www.infosci.cornell.edu/
• Cornell’s Culturally Embedded Computing (Cemcom): http://cemcom.infosci.cornell.edu/
• Human-Centered Computing @ Georgia Tech: http://www.ic.gatech.edu/research/hcc
• Informatics Department @ University of California, Irvine: http://ics.uci.edu especially the Laboratory for Ubiquitous Computing and Interaction, http://luci.ics.uci.edu
• School of Communication and Information @ Rutgers, http://comminfo.rutgers.edu/ especially Mor Namaan’s Social Media Information Lab, http://sm.rutgers.edu/web/

Industry Laboratories

• Interaction and Experience at Intel Corporation
• Google User Experience (UX) Group: http://www.google.com/about/corporate/company/ux.html
• Xerox PARC http://www.parc.com/
• Nokia Research, http://research.nokia.com/research

is your most important course resource. All conference and journal papers related to HCI are searchable online here.