Overview

The course is about understanding key issues around social computing, a field of study concerning with using computing techniques and artifacts to support, mediate, and understand aspects of social behaviors and social interactions. Today, numerous instances and models of social computing are prevalent among end-users, such as Wikipedia, social networking sites (e.g., Facebook), micro blogging (e.g., Twitter), photo sharing (e.g., Flickr), instant messaging (e.g., MSN) and so on. The flourishing of social computing raises the needs to obtain deeper understanding about how these technologies influence human behaviors, and to figure out how to improve existing designs and devise new models based on the understanding of human behaviors in technological contexts.

One way to think about social computing is to focus on constraints, factors that prevent certain processes from happening. For example, physical distance is one constraint that makes it difficult for people to communicate in days prior to the availability of telephone. In social computing,
nevertheless, constraints can come from multiple sources. Some of the constraints are more clearly technical, while many of them can be non-technical. For example, users’ limited capabilities in communication and collaboration, existing social practices of friend-making, and cultural differences in behaviors can all be non-technical constraints prescribing what technical features are likely or unlikely to be useful.

It is the state-of-the-art of social computing research and practice to take both technical and human factors into consideration, and perform analyses and design at the level of “socio-technical systems”, which are abstract systems consisting of both technical components (e.g., the software layer of Facebook) and people interacting with one another over the mediation of technologies (e.g., users of Facebook). This course will guide students to take a close look at some prominent ways that this approach functions in the world today, and to understand certain principles and techniques of social computing.

Course Objective

The course intends to endow students with a base of knowledge and attitudes for them to critically examine existing social computing services, and become familiar with the approach of using socio-technical designs for supporting aspects of social behaviors and activities (e.g., making it easier for people to do X) or enabling new computing applications (e.g., involving people as part of an “algorithm” to solve problem Y more effectively and efficiently).

Course Structure

This is a research-oriented course designed for graduate students and senior undergraduate students interested in social computing research. For the first part of the course, the instructor will give lectures on certain foundational topics of social computing. There will be weekly reading assignments focusing on basic concepts of social computing for students to read and discuss in the class. Students will respond to reading assignments in forms of posting written responses to the course forum and in-class discussion. Students need to read the readings before the class. Posting responses are due by the first course meeting of each week. Starting the second part of the course (week 10), students will take turns to present papers and lead class discussions. Readings for the second part will focus on specific design instances and user studies, so that students may better understand how general ideas of social computing can be applied to specific research and design contexts. There will also be four mini assignments on various aspects of social computing. Students will submit a short paper (1 to 2 pages) for each assignment.

The course requires students to propose and complete a course project. Students can choose to do the project individually or in groups of two to three students. The instructor will facilitate the formation of project groups and make necessary adjustments to ensure that the composition of each group is ideal for the proposed project. In the fifth week of the class, students need to first submit a one-page project proposal, outlining the key idea of the project. In the twelfth week, students will submit a three-page progress report, providing greater detail of the work-in-progress, reporting problems found and projecting work to be done by the end of the semester. In the last week, students will make a poster presentation and submit a final report (at least four pages in ACM SIGCHI archival format). The instructor will arrange a poster session open for faculty and students of related departments to visit (e.g., EECS, Information Systems and Applications, Learning Sciences, Service Science etc.). Also, there will be a “peer-review” mechanism for involving students of the class to choose a number of best projects to receive awards.

Students are highly encouraged to use the course project as an opportunity to experiment with new research ideas or to advance components of a larger research project (e.g., thesis work) that they may be working on outside of the class. The course project can be either technical (e.g.,
designing a computer tool or interface for enabling novel ways of transforming human efforts to perform computation and complete tasks that machine alone cannot do well) or non-technical (e.g., empirical inquiry of users’ online behaviors), depending on students’ interests and skills.

There’s no single textbook. A set of readings will be assigned by the instructor.

**Grading**

10%  Student presentation of selected papers
24%  Postings of reading responses (2% for each posting. Students are encouraged to read and comment more papers, but can only receive credits up to 24% of the final score).
30%  Assignments (3 to 4 assignments in total)
36%  Project
     6%  proposal
     8%  progress report
     10%  poster presentation
     12%  final report

**Information Portals**

Some major conferences:

ACM CHI- Human Factors in Computing Systems
http://dl.acm.org/event.cfm?id=RE151&CFID=58260371&CFTOKEN=42465565

ACM CSCW- Computer Supported Cooperative Work and Social Computing
http://dl.acm.org/event.cfm?id=RE169&CFID=58260371&CFTOKEN=42465565

ICWSM- AAAI Conference on Weblogs and Social Media
http://www.aaai.org/Library/ICWSM/

SocialCom- IEEE Conference on Social Computing
http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=5590331

Related journals and magazines:

ACM TOCHI
http://dl.acm.org/pub.cfm?id=J756&CFID=58260371&CFTOKEN=42465565

CACM
http://dl.acm.org/pub.cfm?id=J79&CFID=58260371&CFTOKEN=42465565

JCMC
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1083-6101

IEEE Intelligent Systems

*Schedule and Reading List will be available at the beginning of the class.*
**Tentative Schedule** (reading list subject to revision)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction: Overview and logistics</td>
</tr>
<tr>
<td>2</td>
<td>Conceptual and methodological issues in social computing</td>
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<td></td>
<td><strong>Notice: Deadline for course enrollment is Mar 4 (Mon).</strong></td>
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**Reading (done by the Wednesday class)**


**Wednesday 10:10-12:00**

- Feb 19
  - <Overview> by TA
  - Professor attending ACM CSCW 2014

- Feb 26
  - Professor attending ACM CSCW 2014

**Friday 10:10-11:00**

- Feb 21
  - <FAQ> by TA

- Feb 28
  - National Holiday
  - No Class

**Week 3,4,5 - Computing for Supporting People**

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<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tr>
<td>3</td>
<td>Computer-mediated communication</td>
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**Mar 5**

- First assignment out

**Mar 7**

- <Brainstorm 1>


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<tr>
<th>4</th>
<th>Distributed collaboration and online communities</th>
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<tr>
<th>5</th>
<th>Social media and social networking</th>
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| | “Twitter shows how the world is feeling” CNN http://thechart.blogs.cnn.com/2011/09/29/twitter-shows-how-the-world-is-feeling/


<table>
<thead>
<tr>
<th>Week</th>
<th>Activity</th>
<th>Notes</th>
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</table>
  
  Chapter 1 and Chapter 4, Easley, D. & Kleinberg, J. (2010). *Networks, crowds, and markets: Reasoning about a highly connected world*. Cambridge University Press.  
  
  
  Mar 26 Second assignment out  
  
  Mar 28 <Guest lecturer> |
  
  
  
  Apr 2 Project proposal due (submit both the hard copy and the original file)  
  
  Apr 4 University Spring Break, No Class |
| 8    | Behavioral data analysis | TBD  
  
  Apr 9 <Method 2 Behavioral data analysis> |

*Week 9,10 – Involving People in Computation*
<table>
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<tr>
<th>9</th>
<th>Human computation and crowdsourcing</th>
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<tr>
<th>10</th>
<th>Social tagging and collaborative filtering</th>
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<tr>
<td>Week 12 to 15</td>
<td>Design Instances and User Studies</td>
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<tr>
<td><strong>12</strong></td>
<td>Students’ directed discussions of selected papers</td>
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<td><strong>13</strong></td>
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<td><strong>14</strong></td>
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<tr>
<td><strong>15</strong></td>
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<tr>
<td><strong>May 7</strong></td>
<td>Third assignment due</td>
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<tr>
<td><strong>May 14</strong></td>
<td>Project progress report due</td>
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<tr>
<td><strong>May 21</strong></td>
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<tr>
<td><strong>May 28</strong></td>
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**Week 16 - Special Topics**

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<tr>
<th><strong>16</strong></th>
<th>Social relevance and big picture - Responding to social problems - Human-centered computing</th>
<th><strong>June 4</strong></th>
<th><strong>June 6</strong></th>
</tr>
</thead>
</table>
| 17 | Final presentation: Poster presentation of course project | June 11 Project time | June 13 Poster session  
June 18 (Wed) Final report due |
|---|---|---|---|

Appendix- Candidate papers for student-directed discussion (subject to revision)

**Computer-mediated communication:**


**Social media:**


Twitter and the development of an audience: those who stay on topic thrive. CHI 2012

**Human computation and crowdsourcing:**


**Tools for collaboration and social interaction:**


**CSCL and Education:**


**Modeling online users:**


Wang, Y-C., Kraut, R., & Levin, J. M. (2012). To stay or leave? The relationship of emotional and informational support to commitment in online health support groups. *Proceedings of CSCW 2012*.

**Computers as social actors:**

