Social Computing Systems

*EECS 498, Winter 2016*

**Summary**: Computation rarely exists in isolation. From social media, to collaboration and coordination tools, to crowdsourcing and collective intelligence, technology has risen from use as an individual tool for use in focused domains to play a role in or even mediate a majority of social interactions today. *Social Computing* is the study of this interplay between social processes, and the computation that supports and augments it. This course covers social media, data mining and analysis, interaction design, crowdsourcing, human computation, and peer production. Through a semester-long group project that will result in the creation of a working social computing system, this course also fulfills the College of Engineering’s Major Design Experience (MDE) requirement.

**Instructor**: Walter S. Lasecki ([http://web.eecs.umich.edu/~wlasecki/](http://web.eecs.umich.edu/~wlasecki/))

**Lecture**: 1:30pm-3:30pm T/Th, 1024 FXB

**Credits**: 4

**Prerequisites**: EECS 493 (User Interface Development) or instructor permission

**Office hours**: Mondays, 4:30-5PM EDT (2636 BBB)

**Course website**: [http://tiny.cc/socsClass](http://tiny.cc/socsClass)

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**Schedule (by week)** *subject to slight changes*

1. Introduction and overview
2. Social computing platforms: types and uses
   a. Mobile and situated interaction
   b. Collaborative filtering
3. Social Networks I
   a. Social Media: Facebook / Twitter / Yo / 4Chan
   b. Other SNSs
4. Social Networks II
   a. Design tradeoffs
   b. Networks properties
5. Work platforms
   a. In-office tools / methods (incl. management + workflow tools)
   b. Connectivity tools: Skype / Google Hangouts / GotoMeeting
   c. “Working together from afar” (telepresence and social robotics)
   d. Collaboration platforms (incl. peer production and innovation)
6. [[ Project Idea Pitches — February 9th and 11th ]]
7. Game theory and incentives
   a. Gamification
   b. Social games / multiplayer gaming
8. Markets and Swarms
   a. Collective intelligence and emergent behaviors
   b. Prediction markets
   c. Swarms, etc.
9. << SPRING BREAK! >>
10. Crowdsourcing
    a. Crowds and platforms
    b. Intelligent systems / real-time
11. Human Computation
    a. Problem solving
    b. Real-time interactive intelligent systems
12. Privacy (and security)
    a. The role of anonymity in online platforms
    b. Privacy in crowdsourcing (for workers, and in crowd-powered systems)
13. Data mining & NLP Techniques
    a. Graphs and networks
    b. [Techniques] Sentiment analysis
    c. [Techniques] Opinion aggregation
14. On-going work, open problems & “The Ultimate Tool”
    a. (Some of the possible) futures of Social Computing
15. [[ Project Presentations — April 12th and 14th ]]

Grading
The final grades in this course will be determined by a mix of small daily quizzes, one ‘big quiz’ on February 25th, and a large course project (with several intermediate steps along the way).
The approximate weighting is:
   Participation: 10%
   Quizzes: 20%
   ‘Big Quiz’: 10%
   Project Steps & Mini-Tasks: 30%
   Final Project Presentation/Document: 30%

I understand that occasional absences are unavoidable. As such, your single lowest quiz OR in-class assignment will be dropped. An additional 1-2 missed quizzes will likely not significantly affect your grade, but regularly missing them almost certainly will. Quizzes will occur at the beginning of class.
Extra Credit Readings
Extra credit is available from (optional) paper reports on the weekly recommended readings (or other paper by permission of instructor). These reports will be graded on a $[0,1,2]$ scale, with 0 (minimal effort) resulting in no extra credit, 1 (reasonably effort) resulting in 0.5 points of extra credit, and 2 (good effort) resulting in a full point of extra credit added to your final grade. No more than 5 assignments may be completed, and all reports must be turned in in either PDF or .doc format. More details are available in this document.

MDE Project
This course will have a large team-based project that will require designing and building a Social Computing system. After group formation, an initial ‘pitch’ document and in-class presentation will help teams get feedback on their ideas. After that, there will be a few milestones on the way to a final project document and presentation. The objective of this project is to build a system from the ground up that really works in practice. Be creative!

Honor Code
All students (including LS&A and Engineering) are required to observe the Engineering Honor Code in all assignments and exams. A copy of the honor code can be found at http://ossa.engin.umich.edu/honor-council/. Please make sure that you clearly understand what constitutes cheating. If you are not sure in any specific case, you should ask the teaching staff. The University takes honor code violations seriously, and penalties can be severe. You are not allowed to share your code with anyone other than your partner. You are not allowed to make use of project or homework solutions by others, including solutions from previous semesters. Make sure that you do not upload your code on github public repositories, as this also constitutes violation of the honor code.

Any suspected violations of the honor code will be reported.

Disabilities and Conflicts
Students with disabilities that are documented with the Services for Students with Disabilities (SSWD) Office should contact the professor during the first three weeks of class to make appropriate arrangements.