CS224W: Social and Information Network Analysis **Fall 2015**

CS224W: Course Information

Instructor Lada Adamic
Office Hours: Thursdays 10:30-11:30am, Location TBD
(SCPD students please send email beforehand if you want to talk to Lada)

Lectures 9:00AM - 10:20AM Tuesday and Thursday in NVIDIA Auditorium

Course website http://cs224w.stanford.edu

Contact

- E-mail us at cs224w-aut1516-staff@lists.stanford.edu
- Use Piazza to post questions: http://piazza.com/stanford/fall2015/cs224w
  (use access code "snap" to register)
- SCPD students can attend office hours remotely via a Google Hangout; the link will be posted on Piazza just before the office hours start.

TAs (office hours, see the course website for location)

- Paris Syminelakis (Mon 12:00-2:00pm)
- Caroline Suen (Tue 1:00-3:00pm)
- Tim Althoff (Tue 3:00pm-5:00pm)
- Sameep Bagadia (Wed 5:30-7:30pm)
- Rohit Mundra (Thu 4:30-6:30pm)
- Nihit Desai (Fri 1:00-3:00pm)

Course Description

The World Wide Web, blogging platforms, instant messaging and Facebook can be characterized by the interplay between rich information content, the millions of individuals and organizations who create and use it, and the technology that supports it.
The course will cover recent research on the structure and analysis of such large social and information networks and on models and algorithms that abstract their basic properties. The class will explore how to practically analyze large scale network data and how to reason about it through models for network structure and evolution.
Topics include methods for link analysis and network community detection, diffusion and information propagation on the web, virus outbreak detection in networks, and connections with work in the social sciences and economics.

Assignments / Grading

- 4+1 problem sets requiring coding and theory (48%)
- Final project: proposal, milestone report, poster presentation, and final report (50%)
- Piazza participation and SNAP codebase contributions (2%)

Homework Policy

Questions We try very hard to make questions unambiguous, but some ambiguities may remain. Ask (i.e., post a question on Piazza) if confused or state your assumptions explicitly. Reasonable assumptions will be accepted in case of ambiguous questions.

Honor Code We strongly encourage students to form study groups. Students may discuss and work on homework problems in groups. However, each student must write down the solutions independently. I.e., each student must understand the solution well enough in order to reconstruct it by him/herself. In addition, each student should write down the set of people whom s/he collaborated with.

Late Assignments Each student will have a total of 2 late periods to use for homeworks and project proposal. One late period expires at the start of every class. (If the assignment is due on Thursday then the late period expires next Tuesday at the start of the class.) No assignment will be accepted more than one late period after its due date. Late periods cannot be used for the project milestone or the final project writeup.

Assignment Submission All students (SCPD and non-SCPD) submit their homeworks via GradeScope (http://www.gradescope.com). Further instructions on how to use GradeScope for CS224W are posted on the course website.
Students also need to upload their code at http://snap.stanford.edu/submit. Put all the code for a single question into a single file and upload it.

Prerequisites

Students are expected to have the following background (recitation sessions will refresh these topics):

- Knowledge of basic computer science principles at a level sufficient to write a reasonably non-trivial computer program. (e.g., CS107 or CS145 or equivalent are recommended)
- Familiarity with the basics of probability theory. (CS109 or Stat116 is sufficient but not necessary.)
- Familiarity with the basics of linear algebra (any one of Math 51, Math 103, Math 113, or CS 205 would be much more than necessary.)

Materials

Notes and reading assignments will be posted on the course web site. Reading for the class will be from:

- Networks, Crowds, and Markets: Reasoning About a Highly Connected World by D. Easley and J. Kleinberg (PDFs available online).

Important Dates

Assignment/Work	Out Date	Due Date
Homework #0	now	October 1
Homework #1	September 24	October 8
Project proposal		October 15
Homework #2	October 8	October 22
Homework #3	October 22	November 5
Project milestone		November 12 (no late periods)
Homework #4	November 5	November 19
Project final report		Tuesday December 8; 11:59pm (no late periods)
Project poster session		Wednesday December 9; 8:30-11:30am

We will also hold two recitation sessions in the first two weeks of the course (all in NVIDIA Auditorium):

- SNAP.PY, scalable network analysis in Python: Friday, 9/25 (4:00-5:30pm)
- Review of linear algebra & probability: Friday, 10/2 (4:00-5:30pm)