CS224W: Course Information

Instructor Jure Leskovec
Office Hours: Wednesdays 9-10am, Gates 418

Lectures 9:30AM - 10:45AM Tuesday and Thursday in Gates B01

Course website http://cs224w.stanford.edu

Contact

- E-mail us at cs224w-aut1415-staff@lists.stanford.edu
- Use Piazza to post questions: http://piazza.com/stanford/fall2014/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)

- Alex Zamoshchin (Mon 3:45-5:45pm)
- Alexander Hsu (Tue 3:00-5:00pm)
- David Hallac (Wed 1:00-3:00pm)
- Vikesh Khanna (Thu 2:30-4:30pm)
- Hima Lakkaraju (Fri 3:00-5:00pm)

Topics

- Six degrees of separation
- Models of the small world, Decentralized search
- Small world phenomena, Search in P2P networks, Strength of weak ties
- Graph structure of the web
- Power-laws and Preferential attachment
- Models of network evolution
- Cascading behavior in networks
- Models of network cascades
- Cascades in viral marketing and the blogosphere
- Influence maximization in networks
- Detecting cascades in networks
- Finding communities and clusters in networks
- Spectral clustering and large scale community structure in networks
- Modularity and large scale community structure in networks
- Kronecker graphs
- Link analysis for Web search
- Networks with positive and negative edges

Assignments / Grading

- 4+1 problem sets requiring coding and theory (48%)
- Final project: proposal, milestone report, poster presentation, and final report (50%)
- Piazza and course participation (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, project proposal and project milestone. 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 final project writeup.

Assignment Submission All students (SCPD and non-SCPD) submit their homeworks via GradeScope (http://www.gradescope.com). Students can typeset or scan their homeworks. Make sure that you answer each question on a *separate page*. That is, one answer per page regardless of the answer length. To register for GradeScope, please fill out this form http://bit.ly/1rjFKIj and allow us 24h to create you an account.
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
Assignment 0	now	October 2
Assignment 1	September 25	October 9
Project proposal		October 16
Assignment 2	October 9	October 23
Assignment 3	October 23	November 6
Project milestone		November 13 (no late periods)
Assignment 4	November 6	November 20
Project final report		December 9, midnight (no late periods)
Project poster session		December 11, 12:00pm-3:00pm

We will also hold 3 review sessions in the first two weeks of the course:

- SNAP.PY, scalable network analysis in Python: Thursday, 9/25 (6:00-7:30pm) in Nvidia Auditorium
- Review of probability: Friday, 9/26 (4:15-5:45pm) in Gates B01
- Review of linear algebra: Friday, 10/3 (4:15-5:45pm) in Gates B01