CS224W: Course Information

Instructor Jure Leskovec
Office Hours: Thursdays 4:30PM-5:30PM, Gates 418

Lectures 3:00PM-4:20PM Tuesday and Thursday in Gates B01

Course website http://cs224w.stanford.edu

Contact

- E-mail us at cs224w-aut1617-staff@lists.stanford.edu
- Use Piazza to post questions: http://piazza.com/stanford/fall2016/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 website for locations)

- Will Hamilton (Tues 6:00-8:00PM)
- Jessica Su (Wed 3:00-5:00PM)
- Austin Benson (Thurs 1:00-3:00PM
- Ben Ulmer (Mon 10:30AM-12:30PM)
- Zhedi Liu (Wed 10:00AM-12:00PM)
- Leon Yao (Mon 12:30-2:30PM)

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 (and contributions to the SNAP codebase) (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. Homeworks are due on Thursdays and late periods extend to midnight (11:59PM) on the following Monday. Only one late period can be used per assignment, and no assignment will be accepted more than one late period after its due date (modulo a 15min grace period). Late periods cannot be used for any submission related to the final project (proposal, milestone, or final 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 use your Stanford email (if non-SCPD) and Stanford ID number. The following entry code will give you access to the course: MJ2ZDM.
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 6
Assignment 1	September 29	October 13
Project proposal		October 20 (no late periods)
Assignment 2	October 13	October 27
Assignment 3	October 27	November 10
Project milestone		November 17 (no late periods)
Assignment 4	November 10	December 1
Project final report		TBD
Project poster session		December 13, 3:30-6:30pm, Packard Atrium

We will also hold 2 review sessions in the first two weeks of the course (**these will be recorded**):

- SNAP.PY, scalable network analysis in Python: Friday, 9/30, 12:30-1:20PM (Huang 18)
- Review of probability, linear algebra, and proof techniques: Monday 10/03, 3:00-3:50PM (Gates B03)