CS224W: Course Information

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

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

Contact

- E-mail us at cs224w-aut1213-staff@lists.stanford.edu
- Use Piazza to post questions at: http://piazza.com/stanford/fall2012/cs224w
- 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
- Bob West (Head TA)
  Office Hours: Tuesday, 4:30pm–6:00pm, Gates 450
- Ashton Anderson
  Office Hours: Tuesday, 3:00pm–4:30pm, Gates 450
- Jacob Bank
  Office Hours: Monday, 1:30pm–3:00pm, Gates 132
- Yu (Wayne) Wu
  Office Hours: Wednesday, 11:00am–12:30pm, Gates B26B
- Anshul Mittal
  Office Hours: Wednesday, 12:30am–14:00pm, Gates B26B

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 (50%)
- Final project: proposal, milestone report, poster presentation, and final report (50%)

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 on the problem set the set of people with whom s/he collaborated.

Late Assignments Each student will have a total of 2 free late days to use for homeworks, project proposal and project milestone. One late day expires at the start of every class. (If the assignment is due on Thu then the late day expires next Tue at the start of the class.) No assignment will be accepted more than 1 late day after its due date, and late days cannot be used for the final project writeup.

Assignment Submission To hand in an assignment, use the cover sheet, write down the date and time of submission, and leave it in the submission box Gates. It is an honor code violation to write down the wrong time. Regular (non-SCPD) students should submit hard-copies of homeworks and code. SCPD students submit all works via SCPD. Please do not email your homework solutions to us. Writeups (project proposal, milestone, final report) should be submitted in paper and also emailed to stanford.cs224w@gmail.com.

Prerequisites

Students are expected to have the following background:

- 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 from:

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

Important Dates

Assignment/Work	Out Date	Due Date
Assignment 0	now	October 4
Assignment 1	October 2	October 11
Reaction paper/project proposal		October 18
Assignment 2	October 11	October 25
Assignment 3	October 25	November 8
Project milestone		November 15
Assignment 4	November 15	November 29
Project poster session		December 10, 12:15pm–3:15pm
Project final report		December 11, midnight (no late days)

We will also hold 4 review sessions in the first two weeks of the course:

- Introduction to SNAP, a scalable C++ network analysis library
- Introduction to NetworkX, a useful Python package for network analysis
- Review of basic probability
- Review of basic linear algebra

Detailed schedule will be posted on course website as well as Piazza.