CSE590IS
Internet Systems/Services

http://www.cs.washington.edu/education/courses/cse590is

Steve Gribble
Department of Computer Science and Engineering

What this class is about

• a reading course in modern Internet systems
  – 551-style class discussion and paper summaries
  – Internet systems: a broad spectrum of interesting topics
    • clusters, security, extensibility, content distribution,
      programming models, web systems

• a vehicle to teach you how to teach others
  – help us to “reset and reload” 590S
    • make sure the audience prepares before coming to class
    • teach you learn how to be an effective discussion leader
What your role in the class will be

• you have four jobs this quarter:
  1. read and synthesize 1 or 2 papers per class
     – submit a paper summary before coming to class
  2. actively participate in class discussions
     – come to class with questions and ideas
  3. lead one class
     – read 3-4 papers on the topic, and pick 1 for class to read
     – work with me to prepare a short lecture and to lead discussion
  4. do a take-home midterm

What my role in the class will be

• I also have a few jobs...
  – lead by example for the first few sessions, and a few scattered throughout the quarter
  – help each of you get ready for your class
    • meet with me a week before your class to go over your plan, and work with me as needed
    • meet with me immediately after your class to debrief
Why you should take it

- **you’ll learn a lot about Internet systems/services**
  - this is clearly the direction that our field is going
    - 60% of SOSP ’01 papers, 60% of OSDI ’02 papers, 56% of CCS ’02 papers
  - fertile ground for your research projects
    - identifying open problems is an explicit goal of your lectures and summaries

- **you’ll learn how to give good talks and lectures**
  - for future 590Ss, but also for your conference talks

Administrivia

- **class times and location**
  - Mon 2:30-3:30pm, Friday 3:30-4:30pm
    - we will start promptly on time – don’t be late
    - class held in the systems lab

- **class mailing list and archive**
  - please sign up – instructions are on the website

- **my general office hours**
  - 10:30-noon on Thursdays, 323B Sieg, or by appointment

- **grades**
  - (approximate) 35% your lecture, 25% midterm, 15% summaries, 15% participation
Your duties: for this week

• **pick a topic/class to lead**
  - in class today, or via email, **by Wednesday 6pm**

Your duties: for each class

• **consult the website for the upcoming paper**
  - list of topics and times, specific paper for each class
  - the night before, lecture slides for the class

• **submit your summary before showing up to class**
  - instructions are on the website
    - Paper title/author
    - One-line summary
    - The most important two ideas in the paper, and why
    - The two largest flaws in the paper
    - Identify two important open research questions on the topic, and why they matter
Your duties: for your class

• **at least 9 days before your class**
  – pick one paper from your topic group you want the class to read, and let me know

• **at least 5 days before your class**
  – prepare a draft of your lecture slides, and a draft discussion plan, and meet with me for an hour to go through them

• **the night before your class**
  – send me your final lecture slides (by 6pm) so I can post them

• **after your class**
  – meet with me to debrief

Running an effective reading class

• **lecture for ~20 minutes on topic & paper**
  – **goal**: set the class up for discussion
    • introduce context and background of topic
    • go over assigned paper: topics that are contentious, difficult to understand, or particularly interesting
      – if appropriate, tie in material from unassigned papers

• **lead ~40 minutes of discussion**
  – **goal**: provoke thought, promote participation, go beyond paper
    • identify design decisions, and challenge them
    • identify implications of the work, and ask questions about them
    • drill into juicy details
    • come prepared with questions, but also your opinion on answers
Lecturing

- you'll be doing the talking for the first 20 minutes
  - set the context
    - define problem area, history, scope, what the main challenges are
  - introduce the paper
    - what did the paper contribute, and why does it matter?
    - if appropriate, introduce contributions from other papers in topic area
  - go over the approach, dive into the meat of it
    - how did the paper achieve its goals, what alternatives were there?
      - don't just regurgitate the paper: everybody has read it
  - go over one or two important results
    - methodology, what the graphs show, draw intuition from them
  - (your) conclusions
    - did they address an interesting problem? If not, what did they miss?
    - what are the remaining open problems, related problems?

Lecture time management

- plan on 2 minutes per slide
  - so, you may have no more than 10-12 slides!

- if a discussion breaks out, foster it
  - but once it starts stalling, meandering far off topic, or just getting silly, step in and rescue the situation
    - either bring the discussion back on topic
    - or cut it off and press on with the lecture
  - you are responsible for controlling the quality of the class
Leading discussion

- seed discussion with interesting questions and controversies...and resist the temptation to bash
  - talk about the real impact of the paper in comparison with the intended impact
  - examine the technology trends, project forward, ask how the problem changes
  - drill into a design decision, or an algorithmic detail
  - identify related problems, and ask how they change the picture, or how the proposed techniques can be adapted
  - expose an assumption of the paper, and challenge it
  - come up with a counter-example, and ask for a solution

- come armed with opinions on the answers, so you can influence and participate in the discussion

The topics...